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The Mysore Economic Journal

A MONTHLY PERIODICAL

Devoted to the Discussion of all Economic Topics of Interest

VOL. XI, 1925

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The Mysore Economic Journal

A Monthly Periodical devoted to the Discussion
of all Economic Topics of Interest

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The Mysore Economic Journal

A Monthly Periodical devoted to the Discussion
of all Economic Topics of Interest

Vol. XI JANUARY 1925 No. 1

The Mysore Economic Journal.

By The Editor.

With this issue of the *Journal*, we commence its Eleventh Annual Volume. The ten years which have elapsed have seen the *Journal* go to the utmost corners of the world. We have subscribers from Canada, U.S.A., New Zealand, Mozambique, South Africa, England, Germany and many other countries. To all our subscribers and advertisers we return thanks for their continued patronage. It is our desire to make the *Journal* yet more useful. With this view, we are taking the necessary steps to add to its reading pages and to its illustrated contents, provided the response from our readers is encouraging. The aim of the *Journal* so far has been an educative one; it is intended to make it more largely than hitherto a vehicle for the closer examination of passing events as well, though this has not been by any means neglected in the past. We may claim that we have encouraged criticism of public measures and topics on moderate and sound lines always approaching subjects from a constructive point of view. Our contributors have been from the front ranks of English, American and Indian Journalism, and their articles have appealed to a wide and growing class of readers. This *Journal* is the only Economic Journal in India which has been regularly issued for ten years now without intermission, and this fact speaks for itself. Local Governments and Administrations in India have done much to encourage its reading among their officers, but they can easily do a little more towards this end. Encouragement nearer home may be without difficulty better, but in recent years we have een a tendency on the part of subscribers not to pay in their subscriptions despite repeated reminders. Since we took over the *Journal* from Government, we have had to write off on an average nearly Rs. 2,000 a year under the head of "Arrears". It is our experience that foreign subscribers are more strict and regular in the payment of their subscriptions than those living in India; and British Indian subscribers are a bit better than local (*i.e.*, Mysore) subscribers. Locally, our list has not been growing at the rate at which it ought to. It seems to us that those who ought to be able to pay without a reminder are usually those who require dozens of post cards to get out their dues—if they do make up their minds to pay. This is a singularly sad state of affairs to own for any newspaper Editor or Manager, but a little light thrown on it occasionally ought, in our opinion, to do good to the country. We would like to add that we say this not to belittle our country-men but only to make them see that in matters of this kind a little promptness goes a long way. The adage "he pays twice who pays promptly" holds good most in a Journal Office. It seems a pity that the kindly thought of payment of subscriptions due never enters the heads of many subscribers, despite the many reminders sent. A more business-like habit seems a desideratum, if the country is to get along.

Frequently we have letters asking for reduced rates. We comply with this request so far as our limitations in this regard allow us. "Free supply" requests are by no means rare. These too we agree to on certain occasions. But these lists cannot, with

impunity, be endlessly increased, especially as the "Arrears" of subscriptions of late has become alarming. We should be glad if this point is particularly noted by our would-be "free-subscribers," as they not infrequently style themselves. There is an idea prevailing among these requisitionists that the *Journal* has a large income and that its owners can afford, therefore, to send copies free to themselves or to reading rooms, hostels, and other public institutions. This is not possible for the simple reason that the financial position of the *Journal* does not allow of this concession in every case. Governments—local and other—are owing to a variety of causes, cutting down mercilessly their supplies of copies—in one case we have had a drop in one recent year from 650 to 350 copies and in this year we have had a further drop from 350 copies to 300 copies—and future applicants will kindly note this feature of our position and not make unnecessary applications to us for "concessions" of any kind. The conditions in which this *Journal* is produced are such that further concessions are out of the question and to avoid disappointment we would request a cessation in this unfortunate practice.

Quite apart from this rather undesirable feature of, shall we say, Indian Journalism, may we assure our readers that it will be our endeavour to make this *Journal* more comprehensive in its outlook on men and things, Indian and other? We are adding this year many new contributors and our book reviews will continue to be in capable hands.

Arrangements are in hand for the publication of articles illustrative of modern business methods, business-building and business-ventures. On the purely administrative side, it is proposed to make critical articles a regular feature. Economic questions are to-day coming to the front more and more, and these will be discussed without fear or favour in the *Journal* in the present and coming years. In wishing our numerous readers and advertisers a Happy New Year and many more happy returns of the same, we request them to invite the attention of their friends, here or elsewhere, to our *Journal* and so pave the way for increasing our Subscribers' and Advertisers' Lists.

The Administration of Mysore.

By "Scrutator".

[We publish below an article on the Administration of Mysore by "Scrutator". It traverses allegations in an article which appeared in the columns of a well-known Madras newspaper which, owing to exigencies of space, could not publish, we are given to understand, anything beyond a brief reply. In view of this and the importance of publishing a well reasoned and cogently argued reply to the many and important issues raised in the original article, we give publication below to "Scrutator's" article.—Ed., M.E.J.]

I have read with some interest Mr. D.V. Gundappa's six-column article in the "New India" of 4th November reviewing as it were Mr. Banerji's administration of Mysore since he assumed charge as Dewan. I cannot hope to vie with Mr. Gundappa as regards the length of my observations, for he has a fame to maintain in this line, which I cannot lay claim to, though this article deserves, for more reasons than one, to be noticed at some length. It is always a little too difficult to follow or criticise Mr. Gundappa, for his expansive habit leads him so far astray as to mistake fancies for facts, innuendos for arguments and abuse for criticism. Nor is it possible to collect easily together, in one conspectus as it were, his charges against Mr. Banerji, for it is primarily, if not solely, against him that he writes at such great length and let me add with so much vehemence. An attempt will, however, have to be made to sift his arguments and see if there is anything in them worth consideration.

Preliminary Remarks.

Before this is essayed, a general remark or two seems necessary to clear the ground, more especially as Mr. Gundappa appears to write with a moral indignation all his own. Those

who are familiar with his writings know that this is all but a mannerism of his. It is to create an atmosphere for himself to hurl down adjectives, nay whole clauses containing vituperative castigation. Mr. Gundappa throws his feelings, may I add, into his opinions, to a degree more common in the writers of the 18th century, but entirely unusual in these cultured days. It is truly difficult to understand why any one who possesses much of both, should at all do so. Any confusion between the two can only be set down to inborn intolerance in that person. Mr. Gundappa doubtless has opinions which he holds to be immensely important and their contraries to be prodigiously hurtful. He has a right to hold such views. As one with a deep regard for public food he must necessarily dislike, as a class and in the abstract even, those who think wrong what he thinks right, and right what he thinks wrong : but he need not necessarily, on account of this, be insensible to good qualities in those he criticizes or be governed in his estimation of them by one general presumption, instead of by the whole of their worth or work. Mr. Gundappa's intolerance of others' opinion is something phenomenal. He is possessed with the idea that he is always in the right, and others as nearly always in the wrong. An obsession like that, perfectly intelligible in an earnest person, who is no more infallible than other men, can only lead him to dislike people on account of opinions which do not merit dislike. And that is exactly what has happened to Mr. Gundappa in the present instance.

Personal Attack on Mr. Banerji.

I will not tarry to consider the personal gibes Mr. Gundappa again and again administers to Mr. Banerji in the course of his article. Here are some choice specimens :— (1) "Such a finished representative of the Indian Civil Service." (2) "His own ambassadorial trips." (3) "His random attacks upon public officials." (4) "Thoroughness .....is a merit commonly believed to be scarce in Mr. Banerji's methods of work." (5) "Not in running the routine, not in manipulating the budget figures so as to confound the popular critic, not even in contriving so to distribute official patronage as to appease the clamorous section." (6) "The Dewan's one policy of what can only be described as playing to the gallery." (7) "Mr. Banerji is but an average specimen of the Indian Civilian." I will not attempt to pile up more of these fine samples from his critique. I will only say that they are thoroughly illustrative of his dislike of Mr. Banerji *qua* Mr. Banerji and of everything he has done or is doing. What may be the reason for this sudden outburst against him? Is it mere intolerance or anything deeper even than that ?

Qualified Approval of Sir M. Visvesvaraya's Policy.

I note that Mr. Gundappa has after all come to perceive some wisdom in Sir M. Visvesvaraya's policy or rather politics, of which he was during that distinguished Dewan's period of office the most violent local critic. I say "some wisdom" advisedly for it is still far from what it eventually promises to be. He writes : "The correct conception of our present duties is, without doubt, that which Sir M. Visvesvaraya strove hard to inculcate: The people must be organized to better economic effort." Did Mr. Gundappa allow him to do that ? The burden of his song then was something quite different, the dying (let me hope) echoes of which are still to be caught in the phrases he uses in his present article : (*a*) Much in his (Sir M. Visvesvaraya's) time was "pretentious and wasteful"; (*b*) "once grandiose Economic Conference"; (*c*) liberal investments of "doubtful promise", etc., etc. The myth of waste, indeed, is hard to kill as applied to Sir M. Visvesvaraya or to Mr. Banerji. But it is something that Mr. Gundappa has at long last found occasion to utter even a qualified word of approval for Sir M. Visvesvaraya's acts and policy.

Mr. Banerji's Last Address.

Mr. Gundappa charges Mr. Banerji's address as a lengthy one ; he says, "it could easily have been made shorter". Mr. Banerji's critic has occupied six full columns of "New India" and after that it were a pity to call in question the length of Mr. Banerji's address. Mr. Gundappa ought to know that the Dewan's Address to the Representative Assembly is not restricted to a mere statement

of the policy of Government, and "of facts illustrative of a steady and vigorous pursuit of that policy ", as he would like to have it. It is the bounden duty of the Dewan, whoever he be, "to place the results of the past year's administration and a programme of what is intended to be carried out in the coming year", in order "to remove from their (the people's) mind any misapprehensions in regard to the views and action of Government and to convince them that the interests of the Government are identical with those of the people". I quote these words textually from the Order issued in 1881 calling forth into existence the Assembly. This Order is binding on the Dewan, and the issue, early or late, of the Annual Administration or any other Report cannot be away with it. Entirely in consonance with this view, Mr. Rangacharlu, the father of the Assembly, in his Address delivered on 7th October 1881 said :—"It is His Highness' wish that I should place before you at these Annual Meetings a Report of the administration of the past year and an outline of the measures proposed to be carried into effect in the coming year." Every successive Dewan has adhered to this injunction of His Highness. Mr. Banerji can really have no choice in the matter. Apparently for Mr. Gundappa anything is good to castigate a person whom he does not for the moment like.

Mr. Gundappa's Charges.

Mr. Gundappa's criticism of Mr. Banerji's administration is four-fold :—(1) He has failed to economize administrative expenditure ; (2) he has failed to energize the administration in various branches ; (3) he has not stimulated Economic activity ; and (4) he has not helped to discourage the growth of unwholesome factions and foster the sense of common citizenship. As regards charges (1) and (2), Mr. Gundappa remarks that Mr. Banerji did not give serious and sympathetic consideration to the recommendations of the Retrenchment Committee ; that he has created new posts in the higher grades on the slightest pretext ; that he has instituted a competitive Civil Service Examination this year with a view to let in inefficients by a loophole ; that he has not exacted additional work from Taluk Officers for the relief they have had from the Municipal and Magisterial sides ; and that he is as a Member of the Indian Civil Service perpetuating a policy of more appointments and less work. I hope I have correctly summarized Mr. Gundappa's somewhat rambling argument. Now, if I may so put it, every one of these statements can be proved to be either wholly wrong or utterly misleading, if not positively mischievous, in character.

Retrenchment Work.

Mr. Banerji was chiefly instrumental in bringing into existence the Retrenchment Committee ; orders upon orders have been issued promptly on its recommendations ; special interim reports were issued for Departments dealt with and as each report was issued orders were passed. No other Government in India has, so far as I know, done this. The retrenchment has ended in the abolition of a large number of posts in the higher services and the savings effected by retrenchment amount to Rs. 33 lakhs (Rs. 24 lakhs in 1922–1923 and Rs. 9 lakhs in 1923–1924). This in addition to Rs. 12 lakhs of retrenchment effected by Mr. Banerji in 1921-1922, in the Departments immediately under his control as Member of Council, Mr. Banerji as Dewan only continued the policy of retrenchment he first seriously initiated as Member. This gives the lie direct to the suggestion that he as Member was a different person from what he is now as Dewan. If Mr. Gundappa will read the Government's final order issued in January 1923 reviewing the action taken on the various proposals of the Finance Committee, he will doubtless see that the retrenchment actually effected is very much more than what that Committee had suggested. It might not have been possible for Government to accept every specific recommendation of that Committee, but the cardinal object of its suggestions was that retrenchments of not less than the amount proposed by it should be effected for reducing the finances to order.

This object has been completely achieved as the savings secured are substantial and the budgetary position in the three years ending with the current has been continuously in a condition of equilibrium. There is, besides, a patent contradiction in what Mr. Gundappa

formulates as a charge against Mr. Banerji. Retrenchment, he says, is a new source of revenue added, which Mr. Banerji, he adds, "cannot lay claim to". Then follow the words: "He has, however, been able to report the almost complete abolition of the disparity that has for long existed between the ordinary receipts and the ordinary disbursements of the Administration." Mr. Gundappa apparently desires to create the impression that Mr. Banerji has made no efforts whatever to effect any retrenchment. One may well ask how, if no reduction and economies were made, the disparity to which Mr. Gundappa, with so much gusto alludes, has been abolished? A few figures taken from the published statistics can be made to speak to the truth.

Years.	Ordinary Expenditure on Administration (Lakhs of Rs.)
1920—21 ..	321
1921—22 ..	301
1922—23 ..	277
1923—24 ..	281
1924—25 ..	281

The standard of expenditure was reduced by Rs. 20 lakhs in the two years 1920–21 and 1921–22, during which period Mr. Banerji was the Member-in-Charge, if I remember rightly, of the two large spending Departments, Public Works and Education. Here are a few figures to show the extent of the actual reductions made in these two Departments :—

Department	Years (Lakhs of Rs.)		Reduction
	1920–21	1921–22	
Public Works ..	36	30	6
Education (including University)	48	42	6

Mr. Banerji assumed charge of the office of Dewan in, I think, March 1922. The first year for which he was responsible for the Administration was accordingly 1922—1923. In this year, a reference to the figures given above will show that the charges were further reduced from Rs. 301 lakhs to Rs. 277 lakhs, *i.e.*, by Rs. 24 lakhs. The expenditure in the next two years have risen only by Rs. 4 lakhs and this is the net result of increases and decreases. The heads under which these alterations have occurred can be seen from the figures noted below :—

Groups of Departments	Years (Lakhs of Rs.)		Difference	
	1922–23	1924–25	+	—
Direct demands on Revenue .	49	46	..	3
Palace	23	26	3	..
Civil Administration ..	38	34	..	4
Protection	37	39	2	..
Public Works	25	23	..	2
Moral and Material Development	49	56	7	..
Local Self-Government ..	4	5	1	..
Army and Defence ..	52	52	..	..
Total ..	277	281	13	9

That further economies amounting to Rs. 9 lakhs have been effected, wherever possible, since 1922–23, is evident from the above figures. If, however, in spite of the economies practised, the net result is an increase of Rs. 4 lakhs over the standard to which it was lowered in 1922–23, any fair critic will set it down to the fact that it is not possible for an administration, with any pretensions to modernity, to refuse every demand for additional expenditure, however urgent or necessary. The interests of efficiency and the demands of useful measures in process of expansion, like the extension of educational facilities and the separation of executive and judicial functions, necessitate additional outlay and these have to be met if the administration is not to come to an absolute standstill. The net increase of Rs. 4 lakhs is chiefly on account of education, and the other increases amounting to Rs. 9 lakhs have really been met by resorting to the very means which Mr. Gundappa so eloquently approves, *i.e.*, "retrenchment effected which is virtually a new source of revenue added". A closer reading of the figures would have

enabled Mr. Gundappa to avoid the maze into which he has got himself without any chance of extrication. Mr. Gundappa opines that the re-classification of Receipts and Charges is only a matter of accounting. It is clear that he is either unable to appreciate the object of this arrangement, or he is unwilling to acknowledge its merits. So much, however, has been stated on this head by Mr. Banerji that I refrain from further comment on this topic.

Mr. Gundappa's Incorrectness.

Mr. Gundappa's wresting from the context a stray sentence and hanging a destructive sermon on it is indicative of his usual *suppressio veri* and *suggestive falsi*. A fair critic will state the facts accurately and criticize on the basis of these facts and not invent things and pull them down by an array of words. Mr. Banerji said that "*in certain departments*" it had not been found possible to reduce or even keep stationary the expenditure. Why this should be generalized into a universal condemnation of his whole policy as to retrenchment one fails to understand. The number of new posts so far created in the higher grades are three and only three and as two of these have been against other higher appointments abolished only one should count as a new post; (1) a Secretary to Government in the Local and Legislative Departments to cope with the increasing work in those Departments, in place of one Secretaryship abolished; (2) a Secretary for the Representative Assembly to cope with the work connected with the reformed Representative Assembly, the reorganized Economic Conference and the new Legislative Council; (3) a Special Officer to work out a scheme of advance in the Local Self-Government Department in view of the larger powers given to local bodies and municipalities, a purely temporary one; (4) a Special Officer called the Inspector of Office Systems, to check office working and conduct and audit revenue *receipts*, which was awaiting the approval of the Legislative Council at the time Mr. Gundappa wrote his article and which has now been approved by it; and (5) a Secretary to the Stores Purchase Committee, whose work even Mr. Gundappa commends, which is in place of another Secretaryship abolished. The Darkhast Officer's post was a temporary one. The post of Special Officer, Reforms, has been absorbed. A new Educational Officer in place of a Deputy Inspector-General and a host of assistants cannot by any stretch of imagination be called a new creation, especially when one remembers the increased allotments made to Education during the current year. It will thus be seen that really there have been only one new higher post created and this is closely connected with the new Reforms introduced. Few will gainsay the fact that reform has always meant an increase of expenditure. In England, after the Reform Act of 1832, there was an enormous increase in the number of public offices and the expenditure on them also went up. The one Secretary of His Majesty's Government became in time many Secretaries and it is a fiction even now of Parliamentary law, that any Secretary can sign for another; for the *pia frau* still continues that His Majesty has only one Secretary. The English are, if anything, a practical race, and they don't grudge keeping up a fiction while the fact gives the lie direct to it. The new Reforms in British India have meant the creation of new posts; new posts are, in one sense, a condition precedent, as it were, for implementing the Reforms. We in Mysore have managed, thanks to the vigilance of our Government, to do with a minimum of new posts—only one excluding the Special Officer for preparing a scheme of advance in regard to Local Self-Government which is a temporary one. Can things have been done differently or more efficiently is the question? As regards the new office of Inspector of Office Systems sanctioned but awaiting the approval of the Legislative Council, it is needless to point to the long order recently issued in regard to it—of which no mention even is made by Mr. Gundappa—to prove the necessity for it. While there is an audit of expenditure, there is none for receipts, in which the leakage has been persistent. The position is clear that this charge of multiplying new posts is a baseless one and cannot bear close scrutiny. I will pass over the question of subsidy, etc., which though interesting and important in itself, has no bearing on the topic at issue. It is something that Mr. Gundappa gives

credit to Mr. Banerji for bringing into existence the Stores Purchase Committee, whose vigilance has saved a substantial sum to Government.

Mr. Gundappa's Random Shots.

I pass by also Mr. Gundappa's random shots at Mr. Banerji's "ambassadorial visits", of whose results, he might, pardonably enough, be not quite aware ; at Members of Council not blaming themselves for the omissions and commissions of District officers and Departmental heads, for it would be fatuous to question the correctness of his *ipse dixits* in matters of this kind, and at Mr. Banerji's "gubernatorial tours" of the "touch-and-go" kind, for it is notorious that Mr. Banerji's inspections and interviews in the interior of the State have had no small effect in weeding out parasites of a particularly insidious type. Mr. Gundappa ignores practically the "Tour Notes" placed on the Press Table from time to time. A glance into them would have saved many of the erroneous generalizations he has fallen into. I may add that Members of Council during Mr. Banerji's regime have had a strenuous time of it, both at headquarters and while on tours. Their tours have been more frequent and more systematic, also more fruitful from a public point of view, especially during times of distress, and calamity (*e.g.*, floods) of which this State has had its full share. There must be something peculiarly wrong with Mr. Gundappa's facts as to these matters for him to level charges of the grossly insinuatory kind he does. It is utterly baseless to suggest that Members of Council and Mr. Banerji are bent on "handsome T. A. Bills" rather than on honest work honestly done while on tour ; or that the Members of Council have been content "with the mere fixing of the blame" on the Head of the Department concerned. An ounce of fact were better than a ton of wordy declamation. Equally baseless is the charge that the Civil Service Examination ordered by Government—not by Mr. Banerji as Mr. Gundappa suggests—is to let in inefficients ; on the other hand, it is to secure needful recruits for manning the services. Mr. Gundappa has overlooked the obvious fact that candidates, whether admitted by competition or nomination, are only required for filling up existing vacancies and that their admission cannot possibly add to the expenditure. No increase in the Civil Service has been proposed ; rather it has been reduced by the recent reorganization order.

The Communal Question.

The larger question of the "inefficients" to whom Mr. Gundappa pointedly refers is not to be solved by gibes of this kind. Mr. Banerji, be it said to his credit, has always discouraged rank communalism in politics or in service (*vide* his speech made in the Legislative Council, as a Member-in-Charge of new Self-Government Bill in 1917). Only in 1923 he pleaded for brotherly feelings between all classes. But the question is part of the higher politics of the country and it cannot be solved except with the good-will of the better educated and the better placed. It is time that the higher classes of India saw that they have more to fear from the poor and the oppressed when uneducated than when educated. If they are educated and made to rise higher in the social and economic scale, they are sure to be less a menace to the higher classes than they would be as they are to-day. There is wisdom in the words of Mill than whom I can think of no greater authority on a question of this paramount importance : "I thought, that while the higher and richer classes held the power of Government, the instruction and improvement of the mass of the people were contrary to the self-interest of those classes, because tending to render the people more powerful for throwing off the yoke ; but if the democracy obtained a large, and perhaps the principal, share in the governing power, it would become the interest of the opulent classes to promote their education, in order to ward off really mischievous errors, and especially those which would lead to unjust violations of property." On these grounds Mill was, at one time, even earnestly ardent about the spread of Owenite, St. Simonian, and all other anti-property doctrines widely in England among the poorer classes ; not that he thought those doctrines true, or desired that they should be acted on, but in order that the higher classes might see the error of their ways and help the masses on to a higher life, solely from a sense of self-preservation. England

passed through the crisis of one phase of the class trouble after the Reform Act of 1832 and another is awaiting her now. In India, our peculiar civilization has wrought its own problems for us, and the question of quenching the communal spirit is pre-eminently one of these. It is not to be cured by crying it down, or even by abusing the Dewan of a State ; but by boldly facing it and finding a solution for it. That solution is partially obtained by giving encouragement to those who can justly be entitled to it in the public services of the country—for the Government is here the employer not only of the largest amount of labour but also of the best paid labour. Inefficiency there will be for a time, but it will right itself soon. Mr. Banerji's policy in this matter, has not, so far as could be seen, changed ; only Government's policy, owing to a variety of causes, has changed. That policy, right or wrong, has to be worked out with the minimum of disturbance and irritation to all concerned. And if Mr. Banerji has taken care to do this, is he liable to the cheap characterization that Mr. Gundappa indulges in mouth-filling, if not jaw-breaking, terms ?

More Work for Taluk Officers.

Another charge under this head is that Mr. Banerji has not exacted more work from Taluk Officers for the relief given them from the municipal and magisterial sides. A more grotesque charge it would be difficult to imagine. That the Taluk Officials are among the hardest worked in the whole State needs no mention. That they have been given a little relief from the tyranny of the pen should not form a matter for complaint. The relief has really only being partial for excise work has been thrust on them, of which Mr. Gundappa is obviously ignorant. It should be a matter for congratulation that they can hope to get an opportunity to get into direct touch with the people to feel with them and do the needful for them in their own areas. The complaint that they have not been given other work beats hollow the old world story of Tippu who said that a Taluk Official who did not find out a thief in his area had to pay it with his head ; and if he did not collect the revenue, he had to empty his own earnings instead into the treasury ! All work is and has been on them since the spacious days of Asoka and it seems a pity that Mr. Gundappa should ignore elementary facts to give a momentary touch of realism to his argument.

The I.C.S. : More Jobs and Less Pay.

Finally, under this head, we have the complaint that Mr. Banerji belongs to a service which is fond of perpetuating a policy of more jobs and less pay. Verily, a caricature of the much-vaunted Indian Civil Service of India ! To its many virtues, it seems a pity it did not add the one of self-abnegation. If it had, it would have been really the most glorious service in the world. Let us not be unfair to the great Indian Civil Service in our anxiety to pull it down. Self-abnegation is more easily preached than practised. How many of us can efface ourselves out and allow others to get up the ladder ? But has Mr. Banerji brought into the State only the demerits of his august service and nothing else ? And has he been perpetuating the policy of more appointments and less work as a fact ? I have shown above that the facts are entirely otherwise and that even a casual examination of the position will show the utterly baseless character of aspersions of this type.

Stimulating Economic Activity.

Mr. Gundappa's third charge that Mr. Banerji has not stimulated economic activity is fundamentally wrong. In formulating it, he pays a justly deserved, if somewhat tardy and left-handed, compliment to Sir M. Visvesvaraya for his work in connection with the Economic Conference, whose "unceremonious suspension," as he terms it, he now so sanctimoniously deplores. Mr. Gundappa's claim to weep over the ashes of the Conference would be a justifiable one if he had at least raised his little finger in support of it in Sir M. Visvesvaraya's days. People in Mysore remember the biting terms of abuse he then hurled on him and his Conferences and the ungenerous references he was wont to make to that hardy friend of ours, "T. A. Bills", which I see he has not yet given up. Apart from these meaningless tears over an "attenuated" Conference, what are Mr. Gundappa's grounds for the charges

he levels against Mr. Banerji under this head? Does Mr. Gundappa want the Economic Conference to be resuscitated and made "grandiose" again? If so, let him plainly say so instead of running away from the suggestion. Here again Mr. Gundappa's reckless disregard for facts deserves to be mentioned. He does not mention the fact that the Conference was suspended on the recommendation of the Finance Committee, endorsed by the people's representatives in the Representative Assembly. They were mainly guided by the fact that the financial position had hopelessly restricted the scope for the activities of the Conference. Mr. Banerji did the best he could under the circumstances: he effectually prevented its going into utter deterioration, so that its resuscitation on suitable lines, when a favourable opportunity offered itself, may be possible. Mr. Gundappa says that the Commerce and Industries Department has little or no work and that it deserves to go. If Mr. Gundappa were aware of what Mr. Banerji has said on this and kindred matters in one of his previous addresses, he would have hardly chosen a more unfortunate topic to base his charge on. In that address, he frankly announced his firm determination to abolish every Department, large or small, which did not pay its way or did not subserve public ends. And if the Commerce and Industries Department is still functioning to-day, it is obviously because there is ample work still left for it. Mr. Gundappa makes a show of categorical enunciation of its work only to pull it down. Few, however, who know the facts will be deceived by such endeavours to discredit a Department which is potentially capable of so much good. As it is, the expenditure on this Department has been showing a steady decline, as the following figures will show :—

Year.	In lakhs of Rs.
1921–22 (Accounts) ..	1.86
1922–23 (Rev. Est.) ..	1.33
1923–24 (Rev. Est.) ..	1.56
1924–25 (Bud. Est.) ..	1.44

Novel Vocational Instruction.

Mr. Gundappa's scheme of vocational instruction as a means to bring about an Economic millennium in Mysore would be worth considering if it were not to end in a nation of "wage-earners" and not "scholars". It is easy to have a cheap sneer at the venerable Dr. Seal but more difficult to assail him on his own ground. Any third-rate educationist worth his salt would tell Mr. Gundappa, if he but condescended to consult him, that the true aim and object of vocational guidance is not to turn out machine-like millions of wage-earners, or to subordinate academic training to the absurd mediæval cult of making "*pukka* workmen" of human beings, but to tackle the problem of adjusting the individual pupil to the right school, the right course of study, and the right aim in life, according to his peculiar qualities and abilities. Its primary aim is to prevent the multiplication of the vast number of misfits in life which the country is being threatened with to its detriment. Vocational guidance has, if I may so put it, to be imparted in the interest, not of industry, nor of commerce, nor of professional careers, but in the interest of the individual child concerned, that he may become a self-supporting, contented human being, successful according to his ability and useful as a loyal citizen in his community. Vocationalism must be preceded by pre-vocationalism of a right type to enable the child to *find himself*. If the object of Vocational Education is to be anything else, it would not be worth having, at any rate in India, let alone Mysore. If by it, some lives cannot be led into right paths; if the methods of our schools be made to savour less of the middle ages and more of modern life; and if the revolution that is slowly but steadily coming in our system of education is not brought about without upheaval, vocational guidance had better be eschewed at once in preference to what we have, in the course of our own history, evolved for the well-being of our masses. If Mr. Gundappa knew a little more of education, he would have paused before he seriously suggested an outlandish scheme of the kind he has so sapiently put forward for universal wage-earning in Mysore. Even the narrow vocationalism of our caste system seems preferable to the "wage-earning" panacea of Mr. Gundappa, for caste concerns itself primarily with *distinction* and not *status*; it treats the social fabric as a

self-sufficient and mutually forbearing whole ; and it treats human beings not as automatons but as thinking persons endowed with intelligence. To say this is not to praise the evil that caste has wrought but to recognize its merits such as they are. Even the vocationalism of the hide-bound caste system seems, as I have remarked, infinitely superior to the novel idea of turning out men into workmen as proposed by Mr. Gundappa. While the vocationalism of caste has produced great men and true in the arts of whom India and Mysore in particular is so justly proud, it is a question whether Mr. Gundappa's "wage-earners" can produce anything more than wage-earning ! Vocationalism in India has always included moral guidance, and it is to be feared that in our unduly stressing "wage-earning" we are likely to forget this, its more important, aspect. If education may be described as a preparation for life, or for complete living, I would say that our ancient educators would have fully accepted such a definition. But it would have included preparation not only for this life, but also for a future existence. The harmonizing of these two purposes has always been a difficult task for educators. If it could be perfectly accomplished, many of the problems of education would be solved. But in actual practice there has always been oscillation. Thus in Mediæval times in Europe, stress was laid upon preparation for the world to come, while modern European systems often tend unduly to ignore this side of education. India has had the same problem to face, and has had similar difficulties in meeting it. The question to-day is this : How to prepare the modern Indian boy by the education that is imparted to him to make him fit for the practical duties in life, without forgetting all the time of the life beyond. Any vocationalism which forgets this will be totally unsuited to the Indian soil, and to the genius of the Indian mind. Dr. Seal's scheme takes note, as it were in one philosophic sweep, of the Indian position and is to be commended and not derided as Mr. Gundappa does. Mr. Gundappa, in his desire to look versatile to a degree, brushes it aside by a contemptuous sneer at his "learning" and at his standing "sponsor" to it, as if there was anything wrong in so doing. That is his pleasure and no man can contradict him. All the same it is not without merits from a truly educational point of view. An opponent need not necessarily be called names because he does not hold your own pet opinions or accept your own ill-conceived schemes. And after all what is Mr. Gundappa's scheme for making "*pukka* workmen" of men in Mysore ? "Government must itself", he says, "start or make others start, factories and workshops. It is not at all necessary that they should be of a very extraordinary kind. The Government may start with workshops for the manufacture of the articles which it may require for its own daily use." How many workshops could be started in the State and for what purposes ? What demand is there for their goods, how many could be trained in them, and how would private trade be affected by Government's competition ? These are all questions which can be answered in only one way, but I do not think it is necessary to pursue this fantastic scheme of turning out millions of soulless wage-earners any further.

Retrenchment and Intensifying State Duties.

While Mr. Gundappa is pleading in one breath for retrenchment, he is in another actually urging for the intensifying of State duties, by the opening of State workshops, etc. Even a tyro in finance knows that such intensification is the chief cause of the almost universal increase in State expenditure. While on retrenchment, let me add, more especially as Mr. Gundappa is agreeable to hear high financial authority—he quotes Gladstone—what Roscher, perhaps one of the greatest French conservative writers on Finance, says as to the limits up to which retrenchment can go. "What judgment shall we pass", asks he, "on a Government that, after the manner of the Middle Ages, did not trouble itself about the health, mental training, maintenance, or enriching the people ?" The fact is our conception of a modern State has undergone a complete transformation, while our idea of State expenditure has not kept pace with it. It is

of course theoretically possible to debate the benefits of retrenchment, but in nearly all modern States, outlay is steadily increasing. The War strain has made people urge retrenchment, but even strenuous France finds that retrenchment in one direction means increased expenditure in another. A truer test of an administration is whether its finance is scientifically managed, *i.e.*, in a manner specifically aiming at the elimination of waste of public funds, so that those who contribute towards its upkeep get a fair return for the sacrifices they make. Judged from that standpoint, Mr. Banerji's administration cannot be declared to have been anything other than a success, as even Mr. Gundappa unwillingly acknowledges. A sound Retrenchment policy deals with posts, and not with men. While useless posts should go, under a considered retrenchment scheme, the men holding them should not be made to suffer. The principle underlying it is that if men are thrown out, unemployment is bound to increase, which result is bound to have a deleterious effect on the body politic. On the other hand, no modern State can do away with a trained organization, which, while retrenchment is going on one side, is required on another side to square, as it were, the position. In practice, therefore, retrenchment cannot but have regard to checking wasteful expenditure wherever it is seen; it has also at the same time to render more efficient the State organization to fulfil the fresh functions cast on it. If anything more is expected from a Retrenchment policy, it can only be at the cost of State efficiency or at the risk of public demoralization.

It is notorious that those who urge retrenchment in one direction are generally clamant in other directions for increased expenditure. What is true of the British House of Commons is true as well of the Mysore Representative Assembly.

Financing Agriculture.

The next allied charge appears to be about financing of agriculture. After roundly condemning the Darkhast Officer's work, the results of which he does not so much as even mention and "Takavi" loans and Co-operative Credit, which are as nothing to him, Mr. Gundappa suggests that by means of a "system of guarantees" private capital must be coaxed into agriculture. What this "system of guarantees" means and where this "coaxing" is to end are left to the imagination of those concerned. The agricultural problem has its own difficulties in the State and it is a question if it is to be burdened with further by a "guarantee scheme" of the kind proposed. Who is to pay the interest on the private capital thus "coaxed" into it? And what really are the financial implications of a wild-cat scheme of the kind proposed by Mr. Gundappa. The saying that "a little knowledge is a dangerous thing" is a trite one; but Mr. Gundappa will do well to ponder it and see whether any of his ill-digested schemes will hold water. This "guarantee scheme" can only be equalled by his other fantastic scheme of universal "wage-earning".

Development of Education.

Mr. Gundappa's remarks on Education are too palpably unjust to Mr. Banerji and the mere fact that some of the Municipalities and District Boards have shown an unwillingness to solve the question of a Cess cannot be made the pivot for a tirade against the whole scheme of educational advance proposed by him. The Government have faced, in regard to Education, a difficult situation and have courageously found funds for its expansion on suitable lines. If local bodies do not at once work up to the standards required, they will soon realize (let us hope) the necessity for furthering so good a cause as education and agree to tax themselves to the requisite extent. If not, compulsion will come in and the problem will be solved. It is a distorted view that is presented when it is suggested that the scheme of educational advance adumbrated is "bumptious" or that Mr. Banerji lacked prevision in the matter of the probable view of certain Local Bodies in regard to the Cess. Forecasts are necessary in financial matters and it is ridiculous to suggest that none should be prepared because some are not likely to be realized.

The following figures (in round numbers) show the expenditure on Education for recent years :—

Year	In Lakhs of Rs.
1922–23 (Accounts) ..	42
1923–24 (Rev. Est.) ..	46
1924–25 (Bud. Est.) ..	55

During each of the past three years, about 14 lakhs has been systematically devoted to Primary Education. These figures tell their own tale.

Idea of a Common Citizenship.

I now come to Mr. Gundappa's final charge: Mr. Banerji's failure to discourage the growth of unwholesome factions and foster the sense of a common citizenship. I have already dealt with above with one aspect of this topic. As regards the other, it is not a little curious that in urging for what he calls a consolidation of citizenship, Mr. Gundappa should put in a demand for fostering a "local patriotism". He wants as well that the foreigner should be *taboo* in the State and that the rules for domiciliation should be tightened. What are the implications of these suggestions ? Neighbouring States have to act in a manner mutually beneficial to them. If one State opens the way for complaint against another, it will invite trouble on itself. Rights of Mysore citizenship are doubtless valuable to every Mysorean, but when a Mysorean crosses the border, and the border is reached very quickly often, he has to seek a new domicile and suppose they threaten him with like penalties. What next ? Let Sir Henry Jones, a recognized and unbiassed political philosopher, answer : " So far as I can see, a good and wise State cannot have too much liberty or power or sovereignty nor an evil and foolish one too little. The former would respect and foster the freedom of its citizens and the rights of its rivals, and find that its own well-being involves their well-being and makes it at once their lord and servant. There is not and there cannot be any other true sovereignty or liberty. 'At every step, the rational being is legislating at once for himself and for all others, and his freedom belongs to him just on condition that he does so legislate'..... The freedom of isolation is impotence, and the liberty of caprice is bondage under the hardest of all masters, namely chance." If we legislate against our neighbours, they will return the compliment two-fold, nay four-fold. And who could rightly protest against such legislation ? Apart from this aspect of the matter, where is the line to be drawn ? The limits which good sense sets are the best in matters of this kind. What is at present required is the assiduous cultivation of that larger patriotism which transcends the narrow bonds of caste, sect, community, religion and State.

The Cry against the Foreigner.

It is a pity that the cry against the foreigner should be heard in a land where every one has always been welcome. The first Foreigners' Act in India was passed by the British Government of India and not by any ancient ruler in this land, where the foreigner has always been respected, his goods secured, his property sent to his distant home in case he died. And this since the ancient days of Chandragupta Maurya. Apart from this, how many foreigners have been introduced by Mr. Banerji—the innuendo is there—and how many are his own nominees ? It is idle to ignore the stringent rules in force in this matter in Mysore. No Dewan dare go against them and be it said to his credit, none so far has.

Negative and Positive Achievements.

Mr. Gundappa has some general reflections in his concluding paragraph. He states that Mr. Banerji as Councillor "showed zeal and energy in the merely negative side of criticising politics", etc., but "in striving for positive achievement he failed". This criticism either exhibits the peculiar bias of Mr. Gundappa against Mr. Banerji or his colossal ignorance of the administrative history of Mysore for some years now. I should be ashamed of myself, as a publicist, if I did not know accurately the facts of a case, before I strove to criticise it. Mr. Gundappa betrays his lack of local knowledge when he forgets, in his anxiety to look pretty in the use of antithetical expletives, that Mr. Banerji as Councillor, was mainly, if not solely, responsible for the reorganization of the following half a dozen Departments :— Revenue Department (including Revenue Commissioner's Office, Taluk Offices, Sub-Division Offices, District Offices and Treasury Establishments) ; Forest Department ;

Registration; Industries and Commerce; Medical and Public Health; Electric and Railways; Survey and Settlement; and Public Works. It will never do to suppress, consciously or otherwise, known facts and criticise an administrator on the basis of a supposed state of affairs, existing nowhere except in the imagination of the writer. Mr. Gundappa suggests that Mr. Banerji has no *positive* achievements to his credit since he became Dewan, that his work has been more spectacular than real, and that he does not feel *with* Mysore. Verily, those have no eyes who will not see. What is a *positive* achievement? Is putting through long pending questions not a *positive* achievement? Is working out a big constitutional change not a *positive* achievement? Is staving off financial difficulties (whoever was responsible for them) not a *positive* achievement? What about carrying out a new Educational Reform, during a time of a financial distress? What about improving district administration, Malnad improvement, improvement of major and minor tanks, development of local Self-Government, improvement of Railway administration, bettering communications, medical aid and public health, including village and town improvements, etc., etc.? Mr. Gundappa should read carefully the Government orders issued on these matters to realize the extent of *positive* achievement so far reached. Each administration has its own peculiar problems and it will not do to expect from one, under one set of circumstances, what another, under quite another set of circumstances, achieved. He is an impossible political philosopher who expects even from the same administrator identical results at two different periods of his office. If the conditions vary, the results must vary. That seems a truism but to some ardent minds it seems perplexing that daily we are not having from our prosaic administrators a few more Cauvery Dams and some additional Hydro-electric Works, or at least a couple of Press prosecutions and a few newspaper proscriptions! Such would be not only *positive* but also *impressive* to a degree. "'Tis a mad world, my masters", said the poet and it does seem so, if our critic is correct.

Mr. Gundappa as Dewan-Maker.

There is a great deal more in Mr. Gundappa's article that might be criticised or laid bare to indicate his bias or ignorance of published facts and figures. His review shows that either he has not taken the trouble to acquaint himself with even the bare facts of the problems he has set himself to attack, or if he has, he has had to ignore them because they would not support the views which he wishes to express. It is no surprise, therefore, that his comments, divorced as they are from facts and figures, should contain wrong and misleading statements and even contradictions which conclusively prove that his adverse criticisms are, to say the least of it, unfounded and unfair. Mr. Gundappa's present criticism of Mr. Banerji is quite on a par with his previous attacks on him, one of which persistently ended with the suggestion that he was out to sacrifice the rights of Mysore in the Cauvery waters in favour of Madras. It is strange that in his present lengthy criticism there is not a word about the Cauvery Agreement. Why? Has Mr. Gundappa grown wiser or merely forgotten this all-important topic? It is plain he is not in a mood to give his opponent any credit either for good intentions or for solid achievements. He is out to criticise him, nay pull him down. Hence the concluding burden of his song that a new Dewan, who will feel *with* Mysore—and no one but a Mysorean can feel with Mysore, says Mr. Gundappa—is to-day required to guide Mysore affairs. King-makers there have been since the days of Chanakya and Warwick, but never a one like Mr. Gundappa who claims, as it were, a divine right to depose Dewans and appoint others in their places, because it *just* pleases him.

We have received a copy of the October issue of the Indian Library Journal, published by Mr. K. Kodanda Ramiah at the Andhra Granthalaya Press, Ltd., Bezwada. It is a neatly got-up quarterly Journal published on behalf of the All-India Public Library Association. The issue before us is full of matter likely to prove useful to those interested in Libraries and Library work. The annual subscription is Rs. 4.

The Health-Giving Sea.

By Ellis Barker.

Guided by sound instinct, and the wisdom of experience, the majority of English people who take a holiday go to the seaside. "There is nothing like the sea for a holiday" is a trite and a true saying.

The sea is indeed the great giver of health and strength. Air, light, water and salt are the most potent natural medicines. There are no better tonics obtainable for the town-dweller.

We live on air and sunshine and are starved of air and sunshine during our long winter spent in a more or less sunless and devitalized atmosphere which is often poisoned by smoke, soot and unwholesome chemicals.

Professor Leonard Hill, perhaps the highest authority on the curative properties of air and light, has told us that the air on the seashore is ten times, as invigorating as country air inland.

There are mysterious health-giving qualities in the sea air. Besides, we receive a double dose of sunshine, the direct sunshine, and the light which is reflected from the water. Reflection of the sun by the Swiss snowfields and glaciers makes climbing a particularly healthful occupation. The tops of Swiss mountains and the seaside are about equally invigorating.

Our most valuable foodstuffs are principally air and light and water in another form. The principal value of milk is to be found in those mysterious and most essential factors which are called vitamines, and which scientists have not yet been able to isolate. Abundance of vitamines gives health and strength. Lack of vitamines leads to decline, disease and death.

Vitamines are particularly to be found in fresh greenstuff, especially in thin leaves which have been bathed in the sunshine. Cows fed on sunny meadows give milk exceedingly rich in vitamines, while cows fed on roots, dried hay, etc., give milk which is poor in these essential elements.

The sea, like the land, has its meadows. The pasture of the sea consists of infinitely small plants and organisms which float on the top of the waves and which are the creation of the sunlight. Little fishes feed on commuted sunlight by browsing on the sea meadows. They incorporate in their bodies the commuted sunshine, and they are in turn eaten by bigger fishes, such as cod.

The great storehouse of the human and the animal body is the liver. It is the receptacle of predigested and concentrated foodstuffs. Cods feeding on the sun-fed small fishes lay up a great store of concentrated sunshine in their liver. Cod-liver oil and sunshine are the great remedies for rickets and other deficiency diseases. Cod-liver oil is merely sea sunshine in other form.

Poets have sung silly songs about the barren wastes of the dreary and dreadful sea. However, the sea meadows are at least as rich as the land meadows. They can be cropped unceasingly. It has been said, and not without cause, that a square mile of sea can yield more food than a square mile of land.

The cultivation of the sea crops has not even been begun. Scientists have only commenced the study of fishes and of their food. The supply of sea-foods will be increased in course of time a hundredfold. Nowhere is life more intensive and more prolific than in the sea. The gigantic white cliffs of Dover and all around France are composed of the dead shells of infinitely small animals. Many scientists believe that petroleum consists of the transmuted oil of dead fish.

The wonderful sea is a life-giver to individuals and nations. The sea has created and changed much of the existing land. It has created the seafaring nations.

England and the British Empire are a gift of the sea. At the time when the English were a poor and rude nation the people were herdsmen. The principal production of the country was wool, which was sent over to Bruges and other Flemish towns to be spun and woven by more skilled industrial people.

Queen Elizabeth ordered woolsacks to be put into the House of Lords so that legislators who sat upon the sacks would be permanently reminded of the importance of the national flocks, and the woolsack of the Lord Chancellor is an Elizabethan survival.

England's fortunes were changed when Elizabethan adventurers took to the sea. She became a great maritime and colonizing nation. The wealth and strength of the country and of the race were drawn from the sea, and the great British Empire is one of the sea miracles. From a tribe of rude natives whom the cultivated Romans despised as barbarians sprang a mighty race which has conquered and civilized the world.

London, Glasgow, Edinburgh, Liverpool, Quebec, Montreal, Sydney, Melbourne, Cape-Town, Bombay, Calcutta, Madras, Singapore, lie on the sea. Berlin, Paris, Madrid, Vienna, Rome, Moscow and the great towns of the United States lie inland. To the British Empire the sea ways are as important and indispensable as the high roads and railways are to the great land empires.

Many foreigners object to the British desire to rule the sea. That desire is not due to presumption but to necessity. Loss of naval supremacy would lead to the dissolution and downfall of the Empire. Control of the sea by another Power would be as fatal to the Empire as foreign control of the vital roads and railways would be to any inland Power.

History teaches us that the sea connot have more than one master, and that a sea empire can exist only if it controls the sea ways. The story of Phœnicia, Carthage, Athens, Rhodes, Amalfi, Pisa, Genoa, Venice and Holland must be our guide.

All these sprang from the sea. All of them worshipped the sea as the great giver of power and wealth. All of them declined and decayed when they allowed the control of the sea to fall into other hands.

The Phœnicians, like another England, inhabited a few small and poor islands. They conquered and colonized and civilized a far-flung empire. A great military state destroyed their navy, and a daughter colony, Carthage, took over the burden of the empire and maintained the Phœnician tradition until it was destroyed by the Roman fleets.

Athens and the other sea empires arrived at greatness by industry and energy, and they declined and decayed when the rule of the sea was wrested from them. The Phœnician islands, once the motherland of a great race and empire, became the habitation of a few fishermen. Mighty Amalfi has become a village. Venice, which once was a real Great Power, is now a second-rate city and an historical curiosity.

The British Empire is a sea empire of yesterday. It may share the fate of its great predecessors unless we draw from the miraculous sea that strength which alone will ensure its permanence.

With the desire of aiding and encouraging the Formosa tea industry, the Government has embarked on a policy of official regulation. As a first step, writes H. M. Consul at Tamsui, the Government proposes to endeavour to standardize production by encouraging the present small holders to amalgamate their properties and thus gradually introducing the estate system such as obtains in India and Ceylon. The use of machinery in the different stages of firing is, moreover, to be extended by means of a system of financial subsidies. The second step is the establishment, to be carried out as early as possible during the present season, of an inspection office for all Oolong teas destined for export. The third step is the creation of a central market, where all teas would be sold publicly.

Persia's formerly flourishing silk industry has been virtually annihilated as a result of the world war, and the collapse of Russia. During the fiscal year 1913–14, Persia imported 2,382 batmans (1 batman=6.49 pounds) of silkworm eggs, mainly from France, Italy and Turkey. Such egg imports came *via* the Caucasian route, which, because of troubled political conditions, cannot be used now, and the long, intensely hot, southern route *via* Bombay and the Persian Gulf ports or Baghdad, has been found impossible, as the length of the journey and the high temperature spoiled the eggs. As a consequence imports of silkworm eggs fell to a negligible quantity 41 (batmans) in 1920–21, and Persia's cocoon exports declined from 334,425 batmans in 1913–14 to 146 batmans in 1920–21.

Hints on Listening-in.

By Robert Magill.

It is advisable, if not absolutely necessary, when one wishes to listen-in, to buy a wireless set.

One can, of course, listen-in to sets belonging to other people. But in so doing one misses the keenest pleasure to be found in broadcasting, and that is the right to take a penknife, a buttonhook, and a tin-opener, and mess round with the set to make sparks come out of it. Men share with small boys and monkeys the fundamental itch to take a thing to pieces and see what makes the wheels go round.

Moreover, listening to somebody else's set is dangerous. He usually hands you the ear-phones, but almost immediately he wants to snatch them back again.

He only intended you to taste, not to drink the lot.

Nothing is more maddening than to watch another person, with a fatuous leer on his face, listening to some exquisite fragment you can't hear yourself, and murder is only the first step towards relieving your feeling.

Now, buying a wireless set is a different transaction from buying anything else, such as a motor-car, for example. The salesman doesn't use an aristocratic drawal, and give you Turkish cigarettes.

Neither do you buy one as a woman buys a hat—that is, wander through every other department first, and come out loaded with a patent stove, a bargain in aeroplanes, and a pair of gloves.

Nor does the salesman covertly sneer at you, like your tailor, and tell you that such things as crystal sets are only suitable for Tooting.

He is frank and open, and treats you as an equal. He assumes that you know as much about wireless as Senator Marconi, and he talks familiarly of filaments and electrodes.

Even when you manage to pierce his incredulity with the shameful fact that you don't know a transformer from a transformation, he does not assume that pitying attitude of the man at the off-licence when you mistake a white claret for a Moselle.

Strangest of all, he never tries to plant on you the most expensive set in the shop. If you live in London, he will tell you that you'll get quite good enough results from a guinea crystal set.

Behind his altruism, however, lurks a duplicity that would make Machiavelli look like a Sunday School teacher. He knows what is going to happen.

He knows that as soon as the wireless germ has got his teeth fixed into you you'll become a fanatic, and that he's going to sell you all the sets in the shop, one after the other, until you eventually buy that elaborate affair with the valves that looks like a cross between an illuminated advertisement at Piccadilly-circus and a power station on the Underground.

The crystal set, as a matter of fact, is not bad, but it won't carry more than one ear-phone. You complain about this, and the prevaricator pretends that he imagined you wanted to listen-in alone. No, it isn't worth his taking the old set back.

The new set is an improvement, true, but the results are still diluted forty under proof. You buy another, and another—the latter because the salesman has just discovered with great surprise that there are a few other houses near yours which interfere with the reception.

At the end your lumber room is so stuffed with discarded electrical thingamajigs that it looks like a Disposals Board.

Of course, if you have any mechanical bent, you can save a few shillings by making your own set, providing you instal a lathe, a fitter's shop, a soldering outfit, and a few drills and things.

But to resume, the theory of wireless is that the broadcasting people collect the music at their studio and render it down into ohms, just as you can render an old horse down into beef tea.

These ohms float about in the ether until they catch on your ærial, along which they run into the little box you paid so much money for.

Inside the box are certain works which turn the ohms back again into music. You can tell if the operation is being badly done by the fact that at times you will hear the word "ohm" through the ear-phone proving that one is behaving in a refractory manner.

Obviously there must be another way out for these ohms, and your "earth" wire acts as a waste pipe, or they would accumulate and burst the box.

There are other details, into which it is unnecessary to go. For example, if I explained to you that you have a condenser to condense the stuff, and then an amplifier to amplify it again, you wouldn't believe me.

The beauty of wireless is the ease with which you can instal the set yourself, providing you are handy enough with tools to be able to get a man to set up the pole, an electrician to put up the wires, and a builder to knock a hole in the house to let the thing in.

The aerial goes in the air, the earth to earth, and dust to the dusthole, and so forth.

You are now ready to listen-in, and you may, if you like, ring up 2LO and ask them to play a little piece so that you can test things. If you haven't got pluck enough to do this, wait until the children's corner starts, and fix the ear-phones.

Nothing will happen.

Now comes the fascinating part of broadcasting. The failure may be due to a dozen things. Perhaps your aerial is tipped the wrong way, and all the ohms are dripping into the garden next door.

There may be a hiatus in the menagerie of wire somewhere. The crystal may have crystallized, or the tuner be out of tune.

Or possibly your clock is wrong, and the show hasn't started yet.

Eventually, having turned everything that will revolve and moved everything that will move—you hear a very still small voice, like that of a butcher's conscience, calling you a pet. *It's working*!

No. It isn't very loud. You see, there are several millions of people listening-in, so that your share of it is bound to be small.

Besides, next door there is a man who possesses a set with twelve valves, complete with actions and reactions, ductions and inductions and all the latest improvements. This is between you and 2LO, so that the greedy blighter is collecting it before it gets to you—he's wiping your eye, so to speak.

The symptoms of the disease now are an inability to keep calm while the cat purrs, because you can't hear.

You wish you'd married a wife who didn't breathe like a vacuum cleaner, and you want to take a machine-gun and interview the man four doors up who wears squeaky boots.

But the deed is done. Other men may be politicians, golfers, or what not. Henceforth you can retire from the world. You are a listener-in.

British Industrial Research.

In addition to the concrete results of last year's work, the annual report of the Department of Scientific and Industrial Research presents some aspects that are not the less important because they are more general and less particular; and it may not be superfluous to indicate one or two of them, which have special importance at the present time. Large, indeed, as is the volume of the report and conveniently though it is presented in respect to both its sub-division, its list of contents and its index, it has necessarily to include a mass of heterogeneous material, in which individual items and still more their general aspects, may escape recognition in their true perspective.

Forest Products.

One of the most notable of these is the work of the Forest Products Research Board. This Board does not deal with afforestation, but it is concerned with every aspect of the timber when grown, from the varying ways in which it may be developed up to the final products that can be obtained from it. At the present time its work is of the most critical importance. Though it may

not be realized generally, the world is not far removed from a famine of timber, particularly of the soft woods that are most easily worked and hitherto have been the most abundant. This prospect was indeed recognized at the First Empire Forestry Conference, which met in London in 1920, but the situation is much worse than it was at that time. Up to now the United States and to some extent Canada have been regarded as reservoirs of this type of wood, but in the present year the United States, for the first time, began to import timber from the Baltic, and similar importation into British Columbia, which has been going on for some years, is now larger than in 1920.

It is, therefore, of the most urgent consequence to know how to make the best use of such timber as is felled. At the present time much has still to be done before the timber industries can attain this knowledge. It is no exaggeration to say that the testing machinery as yet available in this country does not give satisfactory results, and while the Forest Products Laboratory of the United States at Madison is better off in that respect, and for the time being its methods are to be adopted as standards for testing and grading, they still require further development to enable them to distinguish the physical characteristics of timber, and to determine the physical changes that occur on either natural or artificial seasoning. Simultaneously further knowledge is required as to the che ical changes involved in seasoning; and much may turn on the completeness with which the phenomena of natural seasoning can be reproduced or even improved artificially by processes involving much shorter treatment. Roughly, soft wood timber for constructional purposes takes about 80 years to grow to maturity, and in the period that will be required to enable afforestation to catch up with the results of wasteful and improvident depletion rapid and efficient seasoning will be a matter of the first consequence.

No doubt before 80 years timber will have been superseded for some purposes. It seems, for example, so unlikely that it will continue to be used for the structural part of aircraft that it would be futile now to plant trees intended for such use. For most purposes, however, timber is the one structural material that the earth can renew indefinitely, and a famine in it would be a far more serious event than it may look at first sight. The Forest Research Board has taken some time to get into swing, but it is satisfactory to see from the present report that its organization appears now to be complete, and it is to be hoped that available funds will enable its equipment also to be promptly completed.

Co-ordination of Research.

In the account already given of the Department's work for the year in question attention has been called to results obtained through the Co-ordinating Research Boards, which are among the most valuable of the institutions set up by the Department. It is to be hoped that means will be found of extending the system of active and personal co-ordination to the relations between this country and the oversea Dominions. There is at present a Records Bureau, in which those who search can find the information that has been gained by the Department or communicated to it, but this cannot replace the fertilizing effect of constant communication between representatives of those who do the work and those who are concerned in using its results. The report gives evidence that the Department is in sympathetic official touch with the Dominions, and mechanism should be possible for adding continuous personal communications conducted by competent officers.

It may be hoped that the arrangement announced in respect of the Building Research Board may mean a more considerable output of research work than appears to have been produced during its earlier years. One reason doubtless of the institution of this Board was the urgency of the questions relating to building construction. Without entering here into a criticism of what has been done, it may be said at least that the amount of the results that have been attained is not proportionate to the need for them.

Imports of plateglass into the United States during 1923 were valued at £3,292,180.

Indian Debt Redemption.

A Resolution by the Government of India, Finance Department, No. F.-13-II-F., dated Delhi, the 9th December 1924, has been issued. The Honourable the Finance Member put forward in his last Budget speech a tentative programme of debt redemption giving the figures of total debt of the Government of India in a comprehensive form and using them to illustrate the adequacy of the provision for debt redemption proposed in the Budget. The subject thus introduced received a considerable amount of public attention at the time both in the Legislature and in the Press and recently a resolution on the subject was moved by the Honourable Sir Maneckji Dadabhoy in the Council of State and adopted in the following form :--

'That this Council recommends to the Governor-General in Council that the Government be pleased to take steps to introduce a considered programme at an early date to provide for an annual provision for the reduction or avoidance of public debt.'

During the interval that has elapsed since the first tentative proposals were made in connection with the last Budget, the Government of India have carefully considered the question and have now decided to introduce the scheme detailed in the undernoted memorandum with effect from the year 1925-26. The proposals embodied in the memorandum have been accepted by the Secretary of State and the amount of 4 crores mentioned in paragraph 2 of the memorandum is an amount which, having regard to all circumstances, can reasonably be taken as the minimum annual provision for the purpose of redemption during the next five years in respect of debt outstanding on the 31st March 1923. In calculating the total of the debt charge in the schedule attached to the memorandum exchange has been taken at 1s. 4d. the rupee. If exchange stands above 1s. 4d., the amount of 4 crores proposed would help to amortise the debt at a more rapid pace.

MEMORANDUM.

This scheme shall be in force for the five years 1925-26 to 1929-30 inclusive.

There shall be charged against the revenues of India in each year during which this scheme is in force for the purpose of making provision for the reduction or avoidance of debt—

(*a*) a sum of 4 crores, and

(*b*) such additional sum as is equal to one-eightieth of any excess shown in the total of the debt outstanding on the 31st of March of the preceding year over the total outstanding on the 31st March 1923.

The Governor-General in Council shall apply the debt charge prescribed above towards meeting (*a*) the Railway sinking fund now in operation, (*b*) the depreciation funds of 1½ per cent on the 5 per cent Loans, (*c*) the capital portion of Railway annuities, and (*d*) the capital portion of the annual payment in redemption of India's outstanding liability in respect of the British War Loan, and the balance, if any, towards the avoidance of new borrowing or the reduction or repayment of such other debt as the Governor-General in Council may think fit. Should, however, the total of the first four items exceed, in any year, the amount prescribed, the balance shall be charged to capital.

Sums paid into the depreciation funds, if not applied within the year, shall be accumulated at interest until such time as opportunity arises for application to the purposes of the depreciation funds.

For the purposes of this scheme, the total debt outstanding on the 31st of March 1923 shall be taken as Rs. 8,46·78 crores, made up as shown below and the total debt outstanding on the 31st of March of any year subsequent to 1923 shall be such total as may be certified by the Auditor-General to be the total arrived at by applying similar calculations for subsequent years;—

(Figures are in crores of rupees, sterling amounts being converted at Rs. 15 per £.)

	Rs.	Rs.
Rupee Debt exclusive of Treasury Bills in the Paper Currency Reserve	3,61·42	
Sterling Debt	3,63·95	
Unfunded Debt	62·56	
Capital value of the liabilities undergoing redemption by way of terminable Railway annuities	91·97	
		8,79·90
Deduct—Discount included above but separately provided for	8·23	
Advances to Provincial Governments other than those representing per-Reform Irrigation debt	24·89	
		33·12
		8,46·78

Indian Banking.

The "Present-Day Needs of Indian Banking" formed the subject of a recent lecture delivered in Bombay by Sir Purshottamdas Thakurdas at the Sydenham College of Commerce. There can be no denying the fact that, before the advent of western business methods, India had a banking system all its own, and that the Chetties of the South, the Marwaris and certain other communities of Sind are adept bankers in that old system. Yet why is it that India has not a sufficiency of banks and bankers ? Sir Purshottamdas said that the local talent was certainly carrying on a fair amount of trade before the Europeans came to India and was even now doing the same. With the primitive means of communications in the olden days and the insecurity of property, people who commanded credit to the extent of a lakh were very few and far between, whilst the bulk of the business was the monopoly of those who could command credit to the extent of a few thousands. These small capitalists were still carrying on business on the old lines, and in the general interest of Indian banking it would be necessary to teach these local talent that it would not be long before they are left far behind the rest of the banking world in the country.

Ryots still borrowed money at enormous rates of interest and the only way to improve the situation would be to educate the borrowers and to lead those who would take a broader outlook of the question. The educated classes no doubt, painfully realized the scarcity of banks in the country, but more effective remedy for the situation would be a better education of the local talent. The average Chetty in Madras began his day with about 11 to 20 rupees and ended it with a couple of lakhs. Perhaps yet his standard of education was for all practical purposes nil, while English education was absolutely out of the question. The same story could be told of all the other merchant communities that adhered to the old system. But if these old methods were to continue, India would not have sufficient specie to cope with her merchandise.

Yet even the adoption of western methods failed to have that measure of success that might have been expected in Europe. The superfluous elaboration of Indian business methods was, to a large extent, responsible for the failure. While the branch of a bank in England would require only a manager with an assistant, who was probably an apprentice, for its working, a similar branch in India would require a staff of about 15 persons. A most unfortunate fact to be realized was that a man in India, employed as a clerk, for instance, would consider it below his dignity to leave his desk even to turn the handle of a letter-copying machine. This could be called conceit, but it had been most absurdly attributed to the caste system. Until this elaboration of the staff was done away with, banking facilities would naturally be costly and would still remain in the hands of the Chetty and his brother bankers of the old system. There was a general complaint that students did not get even a footing in the local banks, but that was a universal handicap. Students, Sir Purshottamdas thought, could only find their right places by industry and perseverance ; their hard work and ability, not Indianization alone, would help them in their difficulty.

But that was not all, a vast field lay open to commercial students. If some men could start some small staffed banking institutions in the districts, there would be a great future for banking in the country. The men at the top of the banks should inspire self-confidence for the true measure of credit was the amount of trust that people were willing to place in an individual. Self-help and work in the districts would, the speaker concluded, bring us to realize the wide scope for banking in the country. Mr. A. G. Gray, Managing Director of the Bank of India, who presided, also holds that there is a wide scope for banking in the city. In England and Scotland, a manager with a junior clerk, who was invariably an apprentice, forms the complete staff of the branch of any bank, while in India branches required a larger staff. This was one reason, he said, why branches of banks in India took some time to pay their way.

Industries in the United Provinces, 1923-24.

The annual report of the Director of Industries on the administration of his department for the year ending 31st March, 1924, is more a record of routine work done than one of pushful adventure. Apart from work caused by the fact that the province took part in the British Empire Exhibition, the Department of Industries pursued a normal course. There was a lack of money; the Economy Committee met and made its report; and the Director had perforce to confine himself and his assistants strictly to essential work. This is not the place to show how far the Economy Committee's views have been adopted; but the Government are attending closely to the matter. A year in which the main aim was to retrench afforded no opportunity for launching out on fresh projects.

Out of the Rs. 25,000 placed at its disposal by Government, the Board of Industries made small grants to several applicants who needed money for their industries. This system is reported to work well. The Loan Commissioners examined many requests for loans and commended some to Government. No loan was actually made, though Government have agreed to make some as soon as the formal proceedings are complete. Several private classes and schools were also helped with recurring grants. More of them are likely to expect help soon as local bodies are taking up the Government's offer to assist private weaving schools with grants on a half-and-half basis.

The Department's schools and classes were well attended. The results of examinations were generally satisfactory; and, what is more important, it is stated, that passed students readily find work. If the Legislative Council vote the money the Government wish to open model weaving schools in three places where there have hitherto been none. Whether hand-spinning should be taught in them is a question which is being referred to a committee now sitting under the presidency of Mr. Burn.

The Stores Purchase Department, which is still temporary, was busier than before, and did much to place orders with local firms. The Government believe that this department is less unpopular than it was; but are referring the question of its retention and also that of the staff for industrial survey of Mr. Burn's Committee.

Appendix C to the report deals with the Provincial Court at Wembley and the Government consider that the account given amply justifies the decision to take part in the Exhibition. It seems safe to anticipate the final report so far as to say that the Court has been one of the most successful ones at Wembley; but the full measure of its success can be known only when the effects upon the export trade of the province are seen.

The Department paid due attention to cottage industries. New schools were opened to teach brass-work in Moradabad and ebony work in Nagina, and it is hoped to open others. Arrangements have been made to lend money through co-operative banks to societies of cottage industrialists, and if this plan succeeds it may prove very useful. Weaving, the chief of all home industries, will of course be helped by the new model weaving schools.

In appendix A the Director has surveyed the condition of the chief industries of the province. Many are badly off; and advance is certainly slow. Shortage of coal and labour difficulties have been the chief troubes, and some attempt has been made by the Government of India to alleviate both. Mr. Burn's Committee has been asked to suggest any means of stimulating industries throughout the province, and the Government will fully consider any proposals that may be made.

Sweden has at last decided to evade the duty on imports into India of matches and veneers and splints for matches. A large capital has been raised by a loan floated in London and with it factories will soon be established in India by a Swedish firm to manufacture matches. The evils of an overwhelming rush of Foreign Capital cannot be exaggerated and it is to be hoped that steps will be taken to secure the position of indigenous enterprizes.

Artificial Silk and Silk Manufactures.

The terms "Artificial Silk" or "Art Silk" are given to the fibres which have been produced in recent years, to an ever-increasing extent, by synthetic processes. The production of these fibres represents by far the greatest development in the textile industries for many years, says the "Times".

The raw material used as a base in the manufacture of these fibres is cellulose, which is found either in a pure state in cotton or is extracted from wood by methods similar to those used in the production of wood pulp for paper. Whatever may be the source of the cellulose employed, it is necessary for the manufacture of artificial silk that the substance should be first reduced to a thick liquid state, like the silk in the glands of the silkworm, and then be forced through minute tubes in order that it may acquire the form of a continuous thread. Cellulose, however, is a solid product insoluble in all the solvents usually employed, and to make it capable of being dissolved it must be passed through certain chemical stages, after which a more or less modified form of cellulose is obtained.

Method of Preparation.

There may be said to be two general methods for the transformation of cellulose, the one being by treatment with acids and the other being by treatment with alkalis. In the first case, by certain processes, nitrate or acetate of cellulose is obtained, and these, in their turn, yield what are known as "Chardonnet" and "Celanese" types of artificial silk. By the second method of treatment the cellulose yields, after undergoing various processes, "Copper" artificial silk and "Viscose" artificial silk.

The physical properties of all these fibres vary with the chemical differences. They vary in their absorption of moisture and also in their resistance when wetted, and it must be acknowledged that the employment of these fibres in the manufacture of materials still presents difficult problems. Such, however, is the activity in all the branches of this new industry and such remarkable progress is being made that great developments may be looked for in the immediate future.

To-day the production of the synthetic types of silk exceeds the production of real silk, the world's production last year having been set out as follows :—

	Tons.
United States	14,000
Great Britian	7,000
Germany	6,000
Italy	4,600
France	3,500
Belgium	2,800
Switzerland	1,700
Holland	1,200
Other countries	3,200
Total ..	44,000

For the present year the production is expected to show an increase of more than 25 to 30 per cent. For last year the production of real silk throughout the world was about 25,000 tons.

The great increase in the production of artificial silk is due, largely, to the lustrous beauty of the fibre. It is now extensively used in the manufacture of "artificial" or "art" silk tissues and in combination with real silk, spun silk, wool, and cotton. Its greatest use is on the mechanical knitting loom for the production of "stockinette" tissues for hosiery and women's jumpers, etc.

Manufacturing Developments.

Outstanding features during the last 30 or 40 years in the weaving of silk tissues have been the cheapening of the resulting product by (1) the introduction of power weaving and (2) the perfecting of the metal-weighted dyeing processes in both skein and piece dyeing, whereby silk is replaced by and combined with tin. The effects of

these developments have been to popularize the product and generally to increase the consumption largely. During this period there has throughout the world been a great growth of the trade in Japanese indigenous white silks termed "Habutai". Another feature during this period has been the development of silk manufacturing in the United States, which now absorbs five-eighths of the whole of the world's production of raw silk, thus leaving only three-eighths for other countries.

MAIN TYPES OF TISSUES.

Manufactured silk materials may be classified, broadly, into plain tissues, crepe tissues (made from high twist yarns), figured tissues, and pile tissues. The numerous descriptions represent the results of variations in the weaves or intersections of warp and weft. They may be manufactured from real silk only or they may be produced in "unions" with cotton, wool, or artificial silk. The prices vary largely according to the precise constituents.

Among plain tissues are included the materials known as taffetas, ottoman, paillette, grosgrains or faillies, satin de Chine, bengaline, reps, satin, merveilleux, and popeline. Crepe tissues include crepe de Chine, crepon, marocain, charmeuse, and georgette. Among figured tissues may be mentioned damas, brocade or broche, and lampas. What are known as pile tissues include velours or velvet and plush.

Bezwada Spinning and Weaving Mills, Ltd.

The Directors of the Bezwada Spinning and Weaving Mills, Limited, Bezwada, in their report to the shareholders on the progress and working of the Company for the year ending 30th September 1924, state that the Registered, Authorized and Issued Capital of the Company is Rs. 20 Lakhs consisting of One Lakh of Ordinary Shares of Rs. 20 each, of which 11,907 Shares to the value of Rs. 2,38,140 have been subscribed and allotted, of which Rs. 10 each on 550 Shares, Rs. 15 each on 300 Shares and Rs. 20 each on 11,057 Shares have been called for. The paid-up Capital on these Shares is Rs. 1,81,185 and the amount in advances of application, allotment and call Moneys is Rs. 310 making up a total of Rs. 1,81,495. The amount of calls in arrears is still Rs. 49,955 and the shareholders whose calls are in arrears are requested to kindly pay up their dues at an early date to enable the Mill to start work and become a profit-earning concern as soon as possible. The Profit and Loss Account made up for the year ending 30th September 1924, shows a net loss of Rs. 10,097—3—10, which covers mostly the establishment charges and together with the loss brought forward from the last Balance Sheet, *viz.*, Rs. 3,083—8—4, the total loss amounts to Rs. 13,180—12—2. The sooner the Mill begins to work the greater are the chances of recouping this loss. The Weaving Machinery consisting of 100 Looms of Cooper Brothers, Burnley and the necessary preparatory machinery has been thoroughly cleaned, fitted up and tried by the Weaving Master recently appointed. The Boiler has been received from England and the columns and roof of the Main Mill Buildings are being put up. The Directors regret very much for this abnormal delay which is due to various causes, chiefly want of Capital, secondly, the unavoidable delay in getting the required iron and other materials and thirdly, heavy rains damaging the communications to the Mill and preventing the construction work going on briskly. The Cotton godown, the Staff quarters in 4 blocks, and the Water Tank are completed. The erection of the Engine and machinery will, we note, be now taken on hand and we are keenly anxious to open the Mill in this month. The Directors are also trying to raise sufficient capital to place the order for a spinning plant of 4,500 spindles at least, which may be installed for the mere cost of the machinery and which, if worked side by side with the Looms, will surely bring in larger profits. The Directors convey their thanks to the shareholders for the encouragement shown till now and hope they will continue to patronize the infant concern, by themselves more liberally subscribing towards the Share capital and inducing their friends to purchase shares in this profitable concern.

Industries in the Punjab, 1923-24.

Progress in the Punjab Department of Industries during the year 1923–24 was confined principally to the completion of schemes which had been in hand for some time past. The Maclagan Engineering College for the training of Mechanical and Electrical Engineers, at Moghalpura, was opened on the 1st October, 1923; the Government Dyeing School, formerly housed in the Formal Christian College, Lahore, was transferred to the new School buildings at Shahdara; the Dyeing Factory attached to the School will commence work as soon as certain articles of machinery have been installed; and the Model Tannery at Shahdara is now complete save for the supply of water and Electrical Power. Apart from these schemes, the efforts of the Department during the year were directed largely towards the preparations for the British Empire Exhibition.

One of the most important events of the year was the opening of the Maclagan Engineering College at Moghalpura. The College is intended to provide for the training of Mechanical and Electrical Engineers, and of Mechanics and Electricians. Ten students are to be admitted annually to the higher, or 'A' class, and forty to the lower, or 'B' class. The first session of the College commenced on the 1st of October, 1923, when students were admitted to the first and second year courses in both classes. There have been inevitable difficulties in the provision of complete equipment for all departments of the College, and in the immediate entertainment of a full teaching staff. Three new Professors of Mathematics, Electricity and Science, have now been engaged and will take up their duties before the commencement of the next session. The Principal, Captain Whittaker, deserves considerable credit for his management of the work of the College in its initial stages. The College buildings were formally opened by His Excellency Sir Edward Maclagan on March, 19, 1924.

The work of the various Technical institutions controlled by the Punjab Government was satisfactorily carried on during the year under review. The Railway Technical School (to which is attached the School for the Blind) more than maintained its popularity. The Central Weaving School at Amritsar, and the five district weaving schools continue to do useful work and the proceeds from the sale of manufactures show a satisfactory increase. Facilities for the technical education of women are now provided not only by the Zenana Industrial School, but by the Sir Ganga Ram School for Hindu and Sikh women and girls, which was opened on the 1st of February, 1924, and already contains over seventy students. Work at the Mayo School of Arts continued as usual during the year, schemes for the expansion of the school being impracticable owing to other and more pressing claims for expenditure. The transfer of the Government Dyeing School to Shahdara and the approaching opening of the Dyeing Factory and the Model Tannery have already been noticed.

It has been found impossible for financial reasons to proceed with the provincialization of Industrial Schools controlled by Local Bodies. For the present, the system of making annual grants-in-aid to these schools has been continued, while the general scheme of provincialization is being further considered.

The Punjab Arts and Crafts Depot made a good progress during the year under review, and the net profits of working amounted to Rs. 11,000 round. The Depot has taken an important part in the British Empire Exhibition. Its management on strictly commercial lines by a Government Department, still however, presents certain difficulties and a suitable system of accounts has not yet been devised.

Progress has been made in the development of Public Electric Supply undertakings, and it is expected that Multan and Rawalpindi and possibly Lyallpur will shortly be supplied with Electric power. The Electric Supply scheme of Jullundur is maturing and much needed improvements are being made or are contemplated in the existing systems at Lahore and Amritsar.

Mineral Production in the Central Provinces, 1923.

The Annual Report on the Working of the Indian Mines Act, VIII of 1901, in the Central Provinces and Berar, during the year ending the 31st December, 1923 shows that the past year was marked by a continuance of the depression in the coal trade and by a brisk demand for manganese. The latter is mainly accountable for the increase in the total number of mines from 147 to 175; 18 new manganese mines were opened, of which 15 were in the districts of Nagpur and Balaghat. Eight new coal mines were started during the year, and despite the fall in prices, a good deal of development was carried on in the coal-fields. The remaining new mines were excavations for limestone in Jubbulpore. Mining was as usual largely confined to a few districts ; manganese mines chiefly in Nagpur (25) and Balaghat (32) ; coal in the coal-fields of Chindwara-Betul (58) and Chanda-Yeotmal (9) ; and limestone quarries (25) and clay pits (5), all ranking as mines, in Jubbulpore.

High prices continued and led to the working of deposits of low grade ore or ore hard to win, which had been abandoned. The output increased substantially from 344,772 tons with a pit mouth value of Rs. 31,91,356 in 1922, to 508,116 tons valued at Rs. 67,00,117. The development of the industry was too rapid for the labour supply, which did not expand to the same extent ; but a good deal of ore was put on the market, which had accumulated on the mines during years of depression, and in most places these stocks have disappeared. The average pit's mouth value of the ore varies from Rs. 11–12–10 in Bhandara to Rs. 15–10–7 in Nagpur, but every district shows a considerable rise since the previous year. The provincial average value of the ore was Rs. 13–3–4.

This strong demand brought into prominence the subject of communications. It is proposed to substitute a broad gauge line for the steam tram from Tumsar to Tirodi which has proved unable to carry the output of the Tirodi mines ; in other localities a tram line is being extended and an aerial ropeway installed.

With the depression in the trade the raisings fell from 675,778 tons to 547,982 tons, and the value from Rs. 52,25,490 to Rs. 36,28,313. As shown in the table below the pit's mouth value of coal declined everywhere :—

	1922	1923
	Rs. A. P.	Rs. A. P.
Chanda ..	7 14 4	6 2 0
Chindwara ..	8 9 0	5 14 10
Betul	6 13 5	4 14 10
Provincial average	7 12 3	5 10 0

The important colliery at Ballarpur, which produces some of the best coal in the province, was reopened in September, 1923. Central Provinces coal is largely of poor quality, and is the first to suffer from any drop in the demand for coal. The recent depression everywhere in the Indian coal industry therefore hit this province particularly hard. With the restriction of demand for the type of coal produced in the province generally, it has been found necessary to make certain concessions to the industry. As a temporary measure dead rent in those cases here it had been fixed at a higher rate was reduced, with effect from the 1st January, 1923, to Rs. 2–8–0 an acre, which represents the minimum royalty of 2 annas a ton on the minimum outturn of 20 tons an acre. Another relief which is, however, justifiable on general principles without reference to the decreased demand allows concerns which have laid tramways or provided other facilities for the transport of minerals to railhead to add a charge of 7 per cent on capital cost and 3 per cent on account of depreciation of the plant and works to the annual total transport and loading charges in calculating the pit's mouth value. The latter concession has been extended to all other minerals on which royalty is fixed by calculation of the value at the pit's mouth. With the object of concentrating on those collieries, which in present conditions, can be most economically worked, five of the principal companies in the Pench Valley each holding several separate leases have been

(*Continued on page* 27.)

Co-operation in Bulgaria.

During the last few years the development of the co-operative movement has made big strides in Bulgaria. The very genuine interest taken in co-operative enterprise by all classes of the population has induced the Statistical Department of the Sofia Government to devote its attention to the subject and to publish certain figures in this regard. In the struggle for existence, which has been a very serious one in Bulgaria since the war, the co-operative movement plays a very important part and the broad masses see in it their one and only salvation. The average Bulgarian has not much confidence in joint-stock companies and similar bodies since the colossal losses suffered in post-war times, when the savings of the middle class, in particular, were reduced to nothing by the devaluation of the currency. All classes of society have come to look upon the co-operatives as means of mutual assistance, and as the National Bank accords these bodies credit on easy terms, they have become an institution of great significance in the country.

Growth of New Associations.

According to the census of the Bulgarian Statistical Department the total number of co-operative associations at the end of 1923 was 2,390, comparing with 1,938 in October, 1921. New associations are continually being founded in both urban and rural districts, the proportion between these two categories of co-operatives being as follows :—In 1921 there were 572 urban and 1,366 rural co-operatives, the division thus being 29.5% and 70.5% respectively ; in 1923 the corresponding figures were 745 and 1,645, or 31.2% and 68.8%. At the close of the latter year there were co-operative associations in 81 of the 92 towns and in 1,178 of the 4,216 villages of Bulgaria. In connection with the returns for 1921, minuter details as to the class of co-operative societies concerned are available. Of the 572 urban co-operatives, 99 were creditary concerns, 207 associations were occupied with consumption or housing, 114 with the purchase, sale or transfer of goods, 13 with insurance, and 92 with production or labour, while the 1,366 rural associations included 940 creditary, 258 consumptive or housing, 64 commercial, 20 insurance, and 36 productive or labour concerns. While the credit co-operatives are most numerous in the hamlets and villages, the co-operatives dealing with consumption predominate in the towns, the percentage proportion in the two cases just mentioned in relation to the entire number of co-operatives being 68.8% in the former and 35.3% in the latter instance.

Types of Societies.

The creditary co-operatives of Bulgaria may be sub-divided into the following categories in respect of their general activity : 940 associations for rural economy (24 of these being urban and 926 rural), 72 "popular" banks (59 urban, 13 rural), eight local co-operative banks (only one of these being rural), and 9 associations of mutual assistance (all of them urban). The so-called co-operatives for rural economy comprise associations with limited liability such as the savings banks and credit institutes after the type of the Reilisen rural banks. The "popular" banks are also limited liability concerns, though on a broader scale and with greater variety. They resemble the Schulz Delitzsch type of bank. The various local co-operatives of a creditary nature are smaller concerns fairly similar to the " popular" banks. The mutual assistance, associations, finally, are formed by members of the individual professions, who incur a limited responsibility, according to the number of their shares, the object in view being solely the assistance of the members.

Between the close of 1921 and the end of 1923, one urban and 156 rural creditary co-operatives were founded, besides 26 additional "popular" banks. To-day Sofia alone has seven of these last-named institutes, while there are barely 25 towns in the country not possessing at least one of them.

The co-operative associations devoted to problems of housing and consumption may be sub-divided into 429 (174 urban and 255 rural) general consumptive co-operatives, 7 (6 urban and 1 rural) consumptive co-operatives dealing with a special commodity, and 29 (27 urban and 2 rural) housing co-operatives. The associations of the first-named group are composed of members of all classes and professions with the object of acquiring articles of daily use at cheaper prices. The special consumptive co-operatives of the same class furnish their members with particular commodities such as bread, meat, medicines or fuel. The housing co-operatives make it their task to provide cheap and hygienically constructed dwellings; they are chiefly post-war foundations. By a special housing law passed during the last session of the Sobranje, this kind of co-operative has received special encouragement from the State in the form of credit on easy terms, the total credit thus provided in the present year's budget being 70 million levas, allotted chiefly to the big towns where the housing crisis is most keenly felt.

The co-operatives for the purchase, sale and transfer of commodities comprise 151 (90 urban and 61 rural) associations mainly catering for the agricultural industries, 25 (22 urban and 3 rural) bodies working for industry in general, and 2 others (both of them urban) serving members of the liberal professions.

Insurance Work.

Among the various other forms of co-operative associations, those devoted to insurance deserve special mention. Two of these institutes are doing splendid work, one of them in the way of general insurance and the other in regard to insurance against hail, and are recognized as organizations of prime importance in the Bulgarian insurance world.

All the successive Cabinets in Bulgaria have evinced great interest in the co-operative movement. A special law governs and safeguards the functions and organization of the co-operative associations. The productive co-operatives have greatly helped to promote the cultivation of tobacco and cereals and have also contributed to the expansion of the rose oil industry, silk-worm breeding and viticulture.

It must be admitted that the co-operative movement owes much to the three big State banks, *viz.*, the Bulgarian National Bank, the Bulgarian Agricultural Bank and the Bulgarian Co-operative Bank, which have at all times been generous in allowing the co-operative enterprises credit on very liberal terms.

The number of members inscribed in the co-operative associations at the close of 1923 was 398,323, or roughly one-twelfth of the entire Bulgarian population. The fully paid-up shares of the co-operatives at the same time represented a total value of 144,796,230 levas, the total reserve funds of the associations being 54,031,693 levas and the total of deposit accounts in the co-operative banks 165,556,585 levas. These figures, however, do not exhaustively express the real wealth of the Bulgarian co-operative institutes, as many of them possess real estate and other assets, but they may serve to show the power and importance of these associations in the country.

(*Continued from page* 25.)

amalgamated and Government has agreed to relax the condition requiring continuous working of each separate lease, provided the new company carries on work anywhere in the area held by it with such reasonable degree of energy as is consistent with the commercial and economical exploitation of the concessions.

Of a total of 27 limestone quarries, 20 in Jubbulpore and 2 in Bilaspur were actually worked, and production increased from 131,606 tons valued at Rs. 2,98,090 to 252,703 tons valued at Rs. 4,66,198-4. This increase of 56 per cent in the value of limestone extracted is an index of the activity of the cement industry in which the local limestone is largely used. The output of white clay fell from 34,452 tons valued at Rs. 16,352 to 20,293 tons valued at Rs. 9,512, and that of soapstone and red oxide of iron rose from 90 and 594 to 999 and 2,328 tons, respectively.

Post-Graduate Studies in Bombay.

The Government of Bombay have accorded their approval to the following regulations regarding a revised scheme of University Post-Graduate studies adopted by the Senate :—

The aim of the University should be to award the Master's or Doctor's degree in recognition of satisfactory original research work wherever this is possible. For the present, the present system of testing the efficiency of candidates by means of examination should continue, but that of doing so by the character of original research produced should be introduced whenever this is possible, and, in such cases, the two should run side by side till the time is ripe for the complete elimination of the former system.

The University should be the initiating and directing body in the development of the new system of post-graduate work.

In organizing the work, the University should invite the co-operation of Colleges in the teaching and direction.

The lines of post-graduate work which are ripe for development in the new direction are (in addition to Sociology and Economics in which the University already has a school which would work in with the present scheme) (1) Sanskrit and the allied languages, (2) History, more especially Indian History, (3) possibly Mathematics.

If this general scheme be adopted, the sections of the University Library concerned with the needs of research students in the subjects whose development is undertaken will, of necessity, have to be strengthened.

In order to carry out its initiating and directing duties, the University should appoint a Board of Management and a Board of Post-Graduate Studies ; the former would be responsible for the regulation of the business side of the scheme ; the latter, which would consist of the Professors of the University, of the Colleges and of others who are prepared to assist in some measures in the work of students, would either through individuals or sub-committees make arrangements for the direction and supervision of the actual work. The Syndicate would appoint both these Boards.

Though the scheme would be launched in the first place in Bombay, nothing should prevent the recognition of a mofussil Professor as a University teacher under the scheme, if he is prepared to fulfil the conditions required of him by the Board of Post-Graduate Studies.

Any student who wishes to appear for the Master's degree by research, would have to be registered as a research student under this scheme, and the conditions under which he is to work would have to be approved by a competent authority appointed by the Board of Post-Graduate Studies.

The Syndicate should set apart for the purposes of this scheme a sum of Rs. 24,000 per annum in the first instance. As it would absorb the present provision of Rs. 7,000 for post-graduate lectures, it would mean an additional cost of Rs. 17,000 per annum. If it develops, much more money would later be required. This would be in addition to the provision made for the Library.

The University buildings would be the centre for the new organization.

The scheme does not contemplate, in the first stage, the employment of any whole-time Professor or Lecturer by the University, except in its own School of Economics and Sociology. It is clear, however, that the natural development of the scheme will be towards the establishment of similar University research schools in other subjects whose development is undertaken.

It is expected that in the first instance there will be not more than twenty post-graduate research students in each of the subjects whose development is undertaken, including those dealt with in the present University schools.

So far as the University teachers under the scheme are members of the staffs of the Colleges, negotiations regarding their appointment should be made through the College concerned, and any remuneration it is decided to pay should be paid to the College.

The following regulations have been adopted in the matter of post-graduate training by research :—

The University shall undertake the post-graduate training of students by research and students who have been registered under this scheme of training shall alone be able to take the degree of Master of Arts by research, as provided for in the regulations for this degree.

The control of this post-graduate research training, including that in the University's School of Economics and Sociology, shall be vested in a Board of Management, to be appointed annually by the Syndicate, consisting of nine members. This Board shall be responsible for the allotment of the funds assigned for this purpose by the University and for the general business management, subject to the sanction of the Syndicate.

The actual research work shall be done under the direction of a Board of Post-Graduate Studies, which shall be appointed by the Syndicate and shall consist of the Professors of the University and of Professors selected from Colleges and of others who are prepared to assist in the research work.

The subjects in connection with which the organization of such post-graduate studies by research shall be made at present are : (*a*) Economics, (*b*) Sociology, (*c*) Sanskrit and the allied languages, (*d*) History, more especially Indian History, (*e*) Mathematics.

The Board of Management shall submit to the Syndicate in November each year its Budget proposals for the following academic year.

Any student who wishes to appear for the M.A. or Post-Graduate degree by research, must be registered as a research student under this scheme, and the conditions under which he is to work must be approved by a competent authority appointed by the Board of Post-Graduate Studies.

The University buildings will ordinarily be the centre for the organization of post-graduate training by research, but the Board of Post-Graduate Studies may approve of any arrangement proposed in any particular case.

Control of Rain.

Sir Oliver Lodge, in a lecture delivered before the Institute of Physics at the Institution of Electrical Engineers, on "Electrical Precipitation," raised the question as to whence came the electrical separation responsible for the striking and even alarming effects of the thunderstorm.

The local thunderstorm seemed, he said, to require some force depending on friction between falling water drops and the air, and he gave his adhesion to the theory put forward by Professor Simpson that the electricity of the storm was caused merely by the breaking up of the water drops.

From that beginning he passed through such subjects as the smoke problem in cities, with a consideration of the possibility of its electrical removal, to the idea of utilization of atomic energy, which he doubted whether even his grandchildren would see on an engineering scale.

He discussed the possibility of affecting the rainfall by scientific interference with prevailing conditions. Now that it was possible to produce high tension electricity on an engineering scale, he argued something ought to be attempted, though he was uncertain whether the stopping of rain or its production would be the easier matter.

If there were no clouds or extremely little moisture in the atmosphere the position would be hopeless, but the information he received was that in dry countries clouds did sometimes accumulate to disappear without precipitation. Why should these clouds not be electrified or have their electrification changed ? Why should not the different parts of the cloud be so electrified that the drops in it should run together and coalesce ? In other words, why should not natural precipitation be assisted.

There were difficulties about the electrical control of the atmosphere, but he refused to believe that it would be the one region of the earth over which man had no power and about which he must succumb supinely to fate.

Mysore Coffee Cess Bill.

By A. R. Banerji, Esq., C.S.I., C.I.E., Dewan of Mysore.*

The history of the coffee industry in Mysore is a most interesting one. Coffee was first introduced more than a 100 years ago in the Kadur District by one Bababudan from Mecca. It used to be cultivated in the State on *Varam* system originally, that is to say, the State shared the produce with the planter and sold by auction the State's share. Subsequently, a halat was imposed which varied from four annas to one rupee per maund of produce and it was owing to the great fluctuation of the prices during the latter half of the last century that Government finally decided to have the system of acreage assessment of one rupee per acre for temporary and 1—8—0 per acre for permanent tenures. These terms were confirmed by His Highness the Maharaja's Government at the time of the Rendition. So, for a period of 42 years, coffee lands have been given on favourable terms. The lands are held free of assessment for the first three years, on half assessment for the next two years and full assessment thereafter.

Well now, the question of the Coffee Cess should be viewed in my opinion from an altogether different standpoint. The bill has not been initiated by Government as money bill or to add to the general resources, and so, it is not a case of Government imposing additional burdens on the people. This is a bill intended to give special assistance to an important industry which is in need of special treatment and which is also anxious to pay a reasonable share of the cost. On grounds of equity as well as law upon which my friend Mr. Narasimhaiya laid so much emphasis, I would say that the terms upon which Coffee Planters enjoy their lands are not terms which can be regarded as similar to those applying to other agricultural lands. When Government give lands on these concession terms, they are not expected to spend money out of general revenues and general taxes for special investigations and special facilities which may eventually increase the outturn and profits of the industry. Such being the case, I do not think law and equity demand that the expenditure on any experimental Coffee Station in the Mysore State should be defrayed entirely out of the Government revenues. Strictly speaking, I would say that the whole cost should be defrayed by the Coffee Planters themselves. That is the correct position, but Government are showing a generous spirit in spite of the fact that their finances are not so satisfactory, simply because they consider it is high time that a little support and encouragement should be given to that industry which has during the past several years passed through a series of vicissitudes.

The main object of this legislation is to establish a principle of mutual help and co-operation between Government and the people in certain special cases, and I think it is a principle which is not altogether new in administration. I do not think that the principle of the bill can in fairness be described as putting the thin end of the wedge. The burden of the cess falls on those who, for the most part, are willing to pay and it is legalised under our present constitution. Previous to the Reforms being introduced, Government could have, by an executive order, arranged for such a levy in an informal manner like, for instance, the Public Works Department acreage cess in respect of major tanks. Even the Supari Cess was not based on any legal enactment, but on an executive order. It is necessary that there should be uniformity of levy and simplicity of procedure. The whole thing is to be in the hands of Government. The arrangement which after all is to last for a period of five years, will work smoothly and satisfactorily. I really see no valid objection established by the opponents of this measure.

The motion was then put and agreed to.

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* Part of Speech delivered in winding up the discussions on the Mysore Coffee Cess Bill, on the 11th December 1924, in the Mysore Legislative Council.

A Bill is being debated in Switzerland, prohibiting the erection of hotels until December 31st, 1932.

Hurricanes and Coconuts.

Mr. L. A. Wates, Agricultural Instructor, Jamaica writes in the "Journal of the Jamaica Agricultural Society" :—

Experience seems to show that the after-effect on coconut trees of a hurricane is a large loss of trees from a rotting of the bud or growing point. This in its last stages comes under the heading of Bud-rot, as dealt with under the Plant Diseases Law.

It would appear that this Bud-rot is of very slight danger to the coconut industry if kept under regular watch and control during the long periods that usually pass between hurricanes, and only becomes a menace if carelessly neglected *after* a storm.

The most rapid, and least easily recognized kind of Bud-rot that attacks the bud first and destroys the growing point whilst the rest of the tree remains upright in limb and green, is that kind chiefly referred to in these remarks, and most prevalent after hurricane.

Before the hurricane of 1903 very little was thought of or known about this trouble, with the exception of the attacks on trees down at Bluefields and in that direction, which in after years knowledge would appear to have been the other more slowly developing Bud-rot that starts at the base of the butts of the main limbs from the bottom and on the blossoms.

After 1903 however, there was a general outbreak of Bud-rot in the heart which owing to there being no Law to control it, became rather widespread and was causing serious losses, chiefly because planters did not know what the trouble was and were loath to destroy trees till they became actually dead, and were a standing threat to other trees around.

After the passing of the Law in 1915, and its being put into serious operation after 1917 hurricane, when there was a fresh outbreak, and the destruction under that law of something like 80,000 trees, the disease was checked, and practically eliminated, only a rare case being found here and there.

Up to quite lately there has been a good deal of confusion and wrong diagnosis by planters, mixing up leaf-bite disease and Bud-rot. Many imagined-cases of Bud-rot which have recovered, have really been Leaf-bite, and if not that, are most probably caused by the boring beetles destroying the embryo bud. No case of recovery from actual Bud-rot is known.

The conclusion, therefore, must be that Bud-rot here is *largely* the after-effects of hurricane damage developing into the disease because of *neglect* and it certainly does appear that if all planters would take immediate steps to deal with their coconuts after a hurricane the percentage of loss would be very largely reduced.

Each year the hurricane that is brewing for the Island in the future comes nearer, and therefore a reminder of necessary operations will not be inopportune.

It was proved by Professor Ashby, late Govt. Microbiologist, that Bud-rot was caused by attacks of fungi either at the bud or at base of limbs, or on blossoms, which later developed into a stinking bacterial and hopeless decay.

The effect of hurricane on the crown of coconut trees as observed in St. Thomas, Portland, and Hanover, shows the following may happen :—

(1) The limbs of the whole crown may be raggedly snapped in half and kept hanging by shreds.

(2) The upright heart leaves may be given a special twist or broken off.

(3) The cabbage part of the heart may, whilst not wholly broken, receive a fracture low down near bud.

(4) The whole heart may be wrenched over to one side, though not broken off or detached.

The actual total destruction of the heart does not come under review here. The outstanding effect of these various occurrences after hurricane, to the heart, is to cause a number of wounds and open sores. This

immediately lays the tree open to danger from 3 sources : (1) the danger of water soak of wounds, (2) the danger of beetle attack in wounds, (3) the most serious danger of attack from fungi in open sores. The astonishing attacks made by beetles or weevils on trees was very apparent in Hanover visited by writer some months after 1912 hurricane, when trees were found positively seeded with the cocoons of larvae from a beetle. These larvae bore channels up the inside of limbs, and leave a splendid entry for fungi of different kinds.

If this conclusion, therefore, is recognized then it follows that the wisdom of immediate action to protect the injured portion of tree goes without question. The following, therefore, should be carried out, if possible within the same week of the storm :—

(1) Every heart of a coconut should be visited by a climber, all broken limbs trimmed off, and heart of tree pruned back to wherever it is broken or twisted.

(2) All exposed portions of limbs, etc., should be tarred wherever possible.

(3) A quart of strong jeyes and water should be poured into each heart. This remedy has been laughed at by some scientists, nevertheless, practical experience has shown it is effective in destroying beetles and insects, and trees known to be attacked by beetles have recovered after this.

(4) Immediately after, a quart of a mixture of blue stone and white lime made up of 5 lbs. blue stone, 5 lbs. lime and 20 gals. of water should be applied in each heart.

(5) Three weeks or a month later a second application should be made.

(6) All wounds on trunk should also receive a dressing of tar.

All this is very simple, the crux of the whole matter however is immediate, right away attention. If this is seen to, there will not be a serious outbreak of Bud-rot or the need for destruction of 80,000 odd trees again.

Krishnarajasagara and its Critics.

In view of the recent controversy over the Krishnarajasagara and its possibilities the following extract from a letter dated 28th November, 1924, by a recent Indian visitor to Egypt, will be read with much interest :—

Cairo is at the brink of the Arabian desert, the Pyramids being situated on the dividing line between the city limits and the desert. I have no information regarding the rainfall in Cairo, but I do not suppose it is more than a couple of inches, the country being plain for miles around, without a single forest. I happened to arrive in Cairo on a rainy day and I was told that was the first shower since many years. Nevertheless the country is one carpet of green vegetable garden or pasture land from a little away from Port Said to Cairo on either side of the Railway track as far as our eyes can see, water being supplied by irrigation canals from the Nile. Two other dams on the Nile above Assuan have been protected so as to completely impound all the flood waters of the two Niles and to leave nothing to surplus into the Mediterranean. Surveys of the Lybian Desert on the west of Egypt have been taken up in earnest with a view to discover sources of water supply within. These schemes when fully ripened will, I believe, compare in the magnitude of the undertaking with those of the Pyramids which, but for the fact that they actually built up with cut blocks of stone into those shapes, would otherwise pass for natural hillocks impossible of human effort. In the light of these facts, we have only taken time by the forelock in building the Krishnarajasagara Dam, let people say what they will.

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1st January, 1925.

Economics in the West.

Home and Foreign Investment.

London, 31*st December* 1924.—It is an accepted probability that with the general election a matter of history the capital market will be called upon to take up a large number and substantial quantity of new issues. Various governments and local authorities, public utility and industrial enterprises, domestic and foreign, are known to have been negotiating for some time past with a view to borrowing when the favourable moment arrived, and many of these are now expected to come on to the market at no distant date. The results of recent new issues have tended to encourage the early floatation of loans and disposal of capital, overseas loans particularly having been readily taken up. As an example may be mentioned the German Government Loan for 12 millions sterling, the applications for which were estimated to have exceeded the enormous aggregate of 150 millions.

Such heavy over-subscriptions, however, must not be taken necessarily as a criterion of a surfeit of new capital arising from an unprecedented volume of savings. Without a doubt the larger part of the applications in the case of the German Loan was contributed by persons having no intention of holding the loan or indeed of paying up more than the application money, the object being an early resale at an anticipated, and as it transpired a correctly anticipated, premium. In other words a large part of the over-subscription was attributable to speculative operations, and not to a surplus of capital awaiting a suitable opportunity for investment.

Nevertheless the fact that new issues of a moderately attractive character, and particularly overseas issues, have been so readily taken up has revived the question whether this country is lending too much overseas. Some time ago the view was expressed that one of the reasons for the continued depreciation of sterling as compared with dollars was the excessive lending on the part of this country to external borrowers. It was pointed out, however, as a commentary on this view, that over a period of time, say a year or two, over-lending to foreign countries was a practical impossiblity, though a temporary maladjustment between the rate of saving and the rate of overseas lending might for a time unduly depress the exchange value of the creditor's currency. The present depreciation of sterling in terms of dollars is amply justifiable by relative price levels, but it is none the less useful to consider the statistics of new capital issues, comparing pre-war with post-war years.

In the first place, post-war overseas issues on the London market have not been so large, either absolutely or relatively to the total of new money raised, as before the war. The overseas lending through new capital issues in the years 1911-14 was estimated at an annual average of about £170 millions, while in the years 1921—24 the rate of lending was about £130 millions per annum, even though the price level was considerably higher. Again, the aggregate figures of new capital issued for use at home and abroad in the two periods were £210 millions and £220 millions per annum respectively, so that while the past four years have witnessed a movement back towards the pre-war distribution, the proportion of issues to overseas is still below that current in 1911—14. At that time the average percentage of total new issues which were utilized abroad was over 80, while the comparable figure for 1921—24 is 60 per cent. It has to be remembered of course that the figures are not inclusive of all information relative to overseas investments, inasmuch as the volume of purchases of existing securities cannot be traced. Nevertheless they may be taken as indicative of the general movement in the total volume of saving and of their allocation between home and foreign investment.

Mr. Crammond's Views.

Some interesting figures relating to the volume of saving and views on the question of lending abroad have recently been put forward by Mr. Edgar Crammond, who

estimates the total national income for 1923 at £3,300 millions. This figure, when the change in the price level is taken into account, is considerably below that for 1914, namely £2,400 millions, and is about equal to that for 1907, despite a substantially larger population, so that the income per head is lower than before the war. It is however an improvement on the 1922 income which was estimated at £3,000 millions. Mr. Crammond divides up the total income in 1907 and 1923 according to the objects to which it was devoted, with interesting and significant results, as shown in the table below :—

Disposal of National Income, 1907 and 1923.

	1907		1923	
	£ millions	% of Total Income	£ millions	% of Total Income
Food, Drink, Tobacco ...	483.2	22.4	790.0	23.9
Dress	248.2	11.5	470.0	14.3
House	246.0	11.4	360.0	10.9
National Services ...	184.0	8.5	640.0	19.4
Miscellaneous	186.3	8.6	260.0	7.9
Professional and Domestic services not included above	100.0	4.6	160.0	4.8
Cost of distribution ...	200.0	9.3	300.0	9.1
Total expenditure on consumption ...	1,647.7	76.3	2,890.0	90.3
Depreciation and maintenance of capital* ...	180.0	9.3		
Available for new investment abroad ...	150.0	7.4	320.0	9.7
Available for new investment at home ...	176.0	8.0		
Total national income ...	2,153.7	100.0	3,300,0	100.0

* Strictly speaking, this item should be included with expenditure on consumption, but the figure for 1923 is not given separately.

The figures of major interest are the percentages, and the most striking change is the large increase in national services, such as expenditure on education, defence, health and unemployment insurance, which is more than balanced by a serious reduction in the proportions applied to depreciation and maintenance of existing assets and available for investment at home and abroad. It is interesting to note that on the basis of the 1907 distribution between maintenance and new investment the amount available as new capital in 1923 was roughly the same as the estimated total of new capital issues, already discussed, namely 200 millions.

The figures reveal at first sight a serious state of affairs ; but Mr. Crammond treats them in a by no means pessimistic manner. He recognizes that it is essential to economize on both public and private expenditure, and above all to increase the national income, in other words the volume of production and of services rendered to abroad. Means are suggested to this end, but the principal recommendation is a large increase in our foreign investments, which is considered an immediately practicable step, leading to the employment of our available labour supply and to larger receipts in the shape of interest in future years. Mr. Crammond estimates that in 20 years' time our overseas investments will have doubled, making our income therefrom £400 millions instead of less than £200 millions.

It is rather difficult to see in Mr. Crammond's figures the prospect of a large and immediate increase in our overseas investments. In the first place, the net savings for investment at home and abroad have been so drastically curtailed that recovery to the pre-war level must take considerable time. In the second, the probability is that depreciation, maintenance and obsolescence have not been so liberally allowed for in post-war years on account of the small amount available for such purposes. Consequently it may take some time to recover our full mechanical efficiency in comparison with some other countries. Further, it must be remembered that overseas investments require increased exports, and therefore wider and wealthier markets. In other words the effective demand for our goods and services must be increased in order to balance the expansion of imports which must precede an increase in overseas investment. Mr. Crammond himself estimates that in order to achieve the object in view our imports would probably have to be increased by £60 to £80 millions a year, so that a large growth in our overseas investments over and above that which represents accumulated interest would scarcely appear a possibility of to-morrow.

Mr. Keynes' Views.

Mr. Crammond's views provide an interesting contrast to those put forward by Mr. J. M. Keynes at the Liberal Summer School in August last. Mr. Keynes emphasizes the risks inherent in foreign investment,

as revealed by the lengthening list of repudiations, particularly since the outbreak of the war, and points out that while an unprofitable or repudiated foreign investment leaves the security holder with no recourse and no asset more substantial than a piece of ornamental paper, home investment, even though perhaps ill-advisedly or extravagantly undertaken, does leave the nation with some asset in the shape of useful equipment.

Mr. Keynes attributes the excessive overseas investment in large part to the operation of the Trustee Acts. In 1900, by the Colonial Stock Act, the scope of trustee investments was widened to include almost all the loans of colonial governments. This, coupled with the fact that colonial governments frequently undertake developments which in this country are left to public authorities or to private enterprizes, gives an undue advantage to colonial borrowers as compared with equally sound public utilities and industrial enterprizes at home. Hence home developments, through being required to pay higher rates for their borrowing than similar colonial enterprizes, are deprived of an amount of capital which should be available for them, and overseas investment absorbs so large a proportion of our savings that the aggregate is not utilized to the best advantage.

The argument is frequently heard that overseas investment is bound to be advantageous, inasmuch as it increases the country exports. As Mr. Keynes points out, however, there is no benefit to be derived from exports as such, any more than from money thrown into the sea. Unless those exports are returned in the shape of consumable imports or are invested so as to produce an annual return equivalent to that obtainable from investments at home, they are unjustified. Particularly is this true when continued and substantial investment is required at home to enable the nation's productive equipment to keep up with the increase in the population and the higher standard of life demanded by the people.

The suggestions for the adjustment of this state of affairs are simple, at any rate in theory. Mr. Keynes recommends the repeal of the Trustee Acts, no additions to be made to the list of trustee securities unless carrying the guarantee of the British Government, or specially licensed by the Treasury, which would thus be given the power to increase the available investments by adding to the list first-class home and colonial securities, and strictly to ration overseas borrowers. He suggests further that the existing amount of trustee securities should not be reduced by the repayment of Government Debt, if such repayment tends to drive the available capital into overseas securities bearing the trustee privilege.

Existing Conditions.

These criticisms of the existing state of affairs seem to be based upon the assumption that home industries are at present suffering from a shortage of capital, and quite apart from the political difficulties in the way of Mr. Keynes' recommendations, this question itself merits examination. It may be taken as established that the volume of savings in this country at the present time is considerably smaller than before the war, partly on account of a diminished aggregate production, coupled with a larger population, partly owing to the age composition of the population and the impairment of national skill as a result of the war, and partly arising from a redistribution of the nation's income through taxation, which may quite probably involve the expenditure of a larger proportion than before the war on current consumption.

German Industrial Debentures.

Why then, with such a reduction in the available amount of capital, does so large an amount continue to flow out of this country? In the first place, it must be remembered that new countries, dealing with practically untouched resources, can assure a greater return on investments than more highly developed areas. This fact, amply illustrated by the outflow of funds to the United States in the latter part of the 19th century, is borne witness to by the present disinclination of Americans to

purchase foreign securities, and is further emphasized by the continuous outflow from this country to South Africa and Australia. But secondly, funds are withdrawn from this country, just as water flows from one tank to another until the levels are the same, because of the scarcity of capital in Europe as a result of inflation and of the depredations of war.

Both these influences, acting as elements in the equation of supply and demand, tend to prejudice investors, by offering superior terms, in favour of overseas securities, while the factors adduced by Mr. Keynes doubtless contribute to widen the disparity between the attractiveness of home and foreign investments of equal intrinsic risk. The former, however, are not necessarily evil in their effects, for under their influence, in circumstances of a world shortage of capital, the available savings will tend most economically to increase the world's productive power as a whole. Hence, assuming peace and good faith on the part of debtors the investing country will benefit by an increase in its income from foreign investments. Furthermore, it should be recognized that any assistance rendered to potential customers in the shape of capital investment improves the prospect for future profitable trade with them, a statement which is equally true whether applied to old customers undergoing regeneration or to new customers not yet arrived at the adult stage of consumption.

Having noted the benefits of a free and natural flow of capital to the most profitable fields however, and having predicated the maintenance of peace and good faith, thus assuming a narrower diversity of risk as between similar home and foreign enterprizes, it is important to remember that loans for improvident governmental expenditure based upon inadequate taxation are of no lasting value to the borrowing country. They merely finance the spendthrift and add nothing to the sum of human income. Such loans should be rigidly refused. But with these eliminated and the fullest publicity given as to the prospects and security offered, human judgment may in the aggregate be depended upon to make the best practicable use of the world's savings. Nevertheless, that judgment should not be prejudiced by the operation of factors such as those noted by Mr. Keynes. Undoubtedly home industries and home developments cannot at present afford to pay as much as similar overseas concerns for their capital borrowings. But they should not be handicapped in any way by artificial circumstances which place them at a disadvantage in competition for the available supply of funds. It may be argued that there is no evidence of a serious shortage of capital in home industries. But at least domestic enterprizes should be given an equal opportunity with overseas for obtaining capital for the development of productive equipment, and if advantage there must be, it should operate in the directon of increasing our national industrial efficiency.

An integral part of the scheme elaborated by the Dawes Committee for ensuring payment of reparation is the raising of a charge of 5 milliards of gold marks on German industry, in the shape of a mortgage carrying interest at 5 per cent per annum and repayable over a period of years. The sums so received are to be considered as contributions to the reparation payments to be made from year to year, the German Government guaranteeing all payments under the charge. The details of the plan have now been worked out by the Organization Committee appointed for the purpose, and have been embodied in the necessary legislation.

As the permanent basis of the scheme, all industrial enterprizes having a working capital, as assessed for the tax on wealth of this year, in excess of 50,000 gold marks are to be charged with a first floating mortgage to the proportionate extent necessary to yield in the aggregate 5 milliards of bonds. Agriculture, transport, banking, insurance, and Reich and State enterprizes are exempt from the provision. The obligations for which the various concerns are to be liable will be issued to an institution known as the Bank for Industrial Debentures, and will be of two categories. Out of the total of 5 milliards, 750 millions will consist of bearer obligations representing one-half of the liability of the enterprizes most heavily assessed. The remaining 4,250 millions, however, will take

the form of obligations registered in the name of the Bank for Industrial Debentures.

The bearer obligations of the large concerns will be handed over to the Trustee for Industrial Debentures, an official appointed by the Reparation Commission, who may at his discretion dispose of two-thirds of them in the open market. If, however, he is unable or decides not to sell these securities he may at any time hand them back to the Bank for Industrial Debentures, receiving in exchange further bank debentures, while if he disposes of the permitted 500 millions he is bound immediately to hand back the remaining 250 millions. In view of this contingency the Bank will issue in the aggregate 5 milliards of its own bonds, but will at the outset hand over only 4,250 millions to the Trustee, reserving 750 millions to meet any demands made upon it by the Trustee in exchange for unsold bearer obligations of the separate concerns.

The immediate position will be, therefore, that the Trustee will hold 4,250 millions of bonds of the Bank for Industrial Debentures and 750 millions of bearer obligations of various German companies, 500 millions of which he is at liberty to sell. The liability of the Bank on these bonds is divided into two classes. On one-half of them it is liable to pay 5 per cent interest from the start and 1 per cent sinking fund from the third year of their currency. On the other 2,500 millions no interest is payable in the first year, 5 per cent in the second, and 5 per cent with 1 per cent for sinking fund from the third. Both interest and sums for redemption in respect of all the bonds are to be paid into the Reichsbank account of the Agent-General for Reparation Payments. The Agent-General then releases to the Trustee such sums as are payable in respect of the industrial bonds and separate obligations sold by him.

The Bank for Industrial Debentures is, quite clearly, in no sense a bank as that term is understood in this country. It has no assets or income of its own, apart from what it receives from those concerns assessed and charged under the scheme. Hence it relies for the means to make payments to the account of the Agent-General in respect of securities handed over to the Trustee on the payment of interest and sinking fund on the mortgages issued to it by the separate industrial concerns liable under the law. These enterprizes are not liable for the full amount of the income of the Bank for Industrial Debentures in the first three years of the charge. In the first year they are to pay nothing, in the second 2½ per cent interest, in the third 5 per cent, and in the fourth and following years 5 per cent plus 1 per cent for sinking fund. Hence it becomes necessary for the Bank to raise from some other source the balance between its payments to the Agent-General and its receipts from those permanently liable under the reparation charge.

Accordingly legislation has been passed bringing into the scope of the charge for the early years a wider circle of enterprizes than is covered under the above plan. In the first place, the whole of the economic system, with the exception of agriculture and allied branches of industry, is brought under the levy, while secondly the exemption limit is lowered to 20,000 marks. Here again the charge is based on the assessment for the tax on wealth of 1924, and the rates for the annual payments are to be fixed by the Reich Government. In addition to these payments a levy of 10 per cent is to be paid with the object of accumulating a security reserve at the Bank for Industrial Debentures until the amount of the reserve reaches 150 millions, and of 5 per cent so long as the reserve is above 150 millions and below 300 millions. It may be presumed that as soon as the enterprizes with a working capital in excess of 50,000 marks are paying sufficient to meet the amounts due on the 5 milliards of bonds, and as soon as the Bank has accumulated a reserve of 300 millions, the concerns below the 50,000 limit will be relieved of liability. The charge may again be levied, however, if the reserve fund should decline below the specified figure.

Three points are of special interest in connection with this scheme. First, the fact already noted that the Bank for Industrial Debentures is not in any true sense a bank at all, but is merely a medium

for the unification of the securities issued by the separate concerns liable under the levy, and a conduit for payments by the individual enterprizes to the credit of the Agent-General for Reparation Payments. Secondly, the provisions limiting the sale of separate bearer obligations by the Trustee and for their exchange if desired into securities issued by the Bank for Industrial Debentures indicate that a distinct limit is foreseen to the amount of German securities which can conveniently be absorbed by the public in the international markets. Furthermore, these provisions allow of a certain amount of elasticity in the event that the separate concerns whose securities the Trustee holds may increase or diminish their profit-earning capacity during the period of effective operation of the scheme. For if a company, some of whose debentures are held by the Trustee, should meet with difficult times and appear unlikely to be able to meet its charges, the Trustee may hand over its securities to the Bank in exchange for debentures issued by that institution. Thirdly, the scheme gives relief in the early stages to the enterprizes liable throughout the period of its operation by calling on the smaller concerns, bearing only a contingent permanent liability, to render assistance, while additional security is given by this provision for the payment of the total amount required under the scheme.

If then any of the securities are marketed by the Trustee the liability for their service rests in the first instance upon him. He however has to call upon the Agent-General for Reparation Payments for funds to meet the charge, while the latter relies first upon the Bank for Industrial Debentures, depending for its income upon German industry, and in the event of their default upon the German Government. Thus the scheme is merely a part of the general reparation recovery plan, and provides ultimately a mechanism for assisting the German Government more easily, and under strict control, to obtain the funds necessary for the payments required under the experts' schedule.

Record of Pig Iron Output.

The pig iron production of the United States made a new high record in the calendar year 1923, standing at 40,361,000 tons. A century ago, says the *Trade Record* of the National City Bank, the United States was producing less than 10% of the pig iron of the world, but in 1880 with the opening of the great iron and coal areas by rail and water transportation America's share of the world outturn of pig iron advanced to 21%, in 1900 34%, and in the year preceding the war, 1913, was practically 40% (39.7%) of the production of the world. With the temporary fall of European production during the war and the increase in world demand, there was still further advance to 54% in 1916, 61% in 1918, 62% in 1919, and 63% in 1920, dropping to 54% in 1922, and is estimated at about 62½% in 1923, the year of America's biggest production, 40,361,000 tons.

The growth in the use of iron in world industries during the last century is illustrated by the fact that world production of pig iron advanced from about 1,000,000 tons in 1820 to 77,883,000 tons in 1913 when production was interrupted by the outbreak of the war. Production of pig iron by principal countries in 1923 stood at 40,361,000 tons in the United States, Great Britain 7,300,000, France 5,000,000, Germany 4,000,000, and Belgium 2,118,000. In 1913 our production was 30,966,000 tons, Germany 16,476,000, Great Britain 10,260,000, France 5,124,000, and Belgium 2,445,000.

The United States has, according to latest estimates of world experts, about 20% of the "available" iron ore of the world, Brazil 23%, France 16%, Newfoundland 11%, Cuba slightly less than 10%, Great Britain 3%, Germany slightly less than 3%, Russia 2% and Chile about 1½%. The fact that supply of coal, necessary for transforming the ore into pig iron, is far greater in the United States than that of any other iron producing country gives assurance that United States will continue at the head of the list of world producers of pig iron.

The Swiss Council of States has voted in favour of the suppression of Sunday postal deliveries.

Foreign Economic Notes.

London, 31st December 1924.—The French Budget contains none of those revolutionary measures which unscrupulous opponents of the Government alleged were to be incorporated in it. The most important feature is that there is now one Budget instead of two. Since the armistice, Finance Ministers have drawn up two Budgets, one called the "special Budget of recoverable expenses". In this Budget were placed all the expenses arising out of the Treaty of Versailles, such as reparations, pensions, etc., while the receipts were the reparation payments made by Germany according to schedule. These receipts were insignificant but still the farce of the second Budget was kept up and it only served to hide the real financial condition of the country. The fusion of the two Budgets, though it does not mean that France has given up its intention of recovering reparation payments from Germany, will indicate exactly the financial position. Discussion is still going on before the Finance Commission of the Chamber and alterations may yet be made, but the general tone of the measure will remain as it is now. By strict economy the Finance Minister has reduced the demands of certain departments, making the total asked for 24,779 million francs, plus 7,677 millions belonging to the "recoverable expenses budget".

Except for the duty on salt and the business turnover tax on transactions in wheat and flour, which it is proposed to suppress, the Government maintains all existing taxes increased by 20%, as voted by the Poincare administration. These taxes will, it is estimated, produce 29,854 millions, leaving a deficit of about 2,600 millions. A more rigorous collection of taxes and stricter measures to prevent any evasion of payments are expected to increase the present yield. Several small new taxes are levied, principally on exchange operations, on insurance company premiums and on profits accruing from the sale of businesses since January, 1919. The monopoly of the manufacture of matches by the State, which was abolished by the Poincare Government, is re-established, but the Government has the intention of bringing this, as well as the tobacco manufacture, up-to-date. By these means, as well as by the receipt of the 800 million francs due to France under the Dawes Plan, the deficit will be met. These are broadly the measures of the Budget. M. Clementel, the Finance Minister, declared against any new loan except for the completion of the work in the devastated regions. The question of the increase of salaries of Government employees is still being hotly debated. An increase was promised during the elections, but apparently the Finance Minister is not prepared to grant as much as the employees are demanding. A good deal of political capital is, of course, being made out of this question but it is hardly likely that it will alter the general financial intentions of the Government to any great extent. Opponents of the Government are also making an outcry against the Government's intentions regarding the income-tax of doctors, architects and others of that class. The Government would apparently like them to keep books as tradesmen do so that their income could be more accurately estimated. But the opposition to these details only shows that the Government critics have little ground for attack. M. Clementel's bold suppression of the "budget of recoverable expenses" is approved in financial circles as being thoroughly sound.

The Burden of Taxation in Britain.

When the Labour Government assumed office, the Chancellor of the Exchequer, Mr. Snowden, who inherited a large surplus, refused to ease the burdens under which every industry in the country is staggering. Since the beginning of the present financial year, he has collected no less a sum than £348,509,000, maintaining a scale of taxation far more onerous than that of any other country. Industrial leaders, irrespective of their political views, are alarmed at the immediate prospects of trade in this country, unless some relief can be given. Just prior to the dissolution a deputation of adherents

to the Liberal Party waited on the Treasury. With reference to the Socialist cry that taxation should be imposed on "those best able to pay it", Sir Ernest Benn pointed out that no business of any kind is undertaken to-day until the bearing of taxation upon it has been fully investigated. The bulk of high taxation, he emphasized, is necessarily added to the price of goods produced, and the competition for foreign orders is rendered more and more difficult.

Undoubtedly the Chancellor's Budget was based upon the assumption that we had "money to burn", instead of which, as the "Daily Telegraph" remarks, "we have mortgaged in the years of the war all that we had and all that we can earn for many years to come." In his reply to the deputation Mr. Snowden did not reveal any conception of the gravity of a situation in which the ratio of taxation to national income, as given by the "Economist", amounts to 18.8 per cent as compared with 7.1 per cent in 1913. And that statement ignores the claims of local authorities and deals only with Imperial taxes.

Development of Hydro-Electric Resources.

A great part in the future prosperity of France will be played by the development of water power resources, which are estimated at no less than ten million h.p., a figure unsurpassed by any other country in Europe. A survey of the progress made to date is sufficient to refute the assertion that France has not utilized this power in the greatest possible measure in the past. Electrical machinery to a total of 1,447,750 kilowatts was installed in 1921, and this figure had risen to 2,647,000 in 1923, this being equal to 3,650,000 h.p. Distribution cables increased in length from 22,942 kilometres in 1921 to 70,000 in 1923, and the population at present served by these totals 24 million. The total capital invested in the production and distribution of electric current is some 3,500 million francs. More than 20 of the existing works have a capacity of 20,000 h.p. while five reach 40,000 h.p. The future development of electrical energy in France will be a question of high tension distribution; a national programme for the organization of works and systems is already being studied. The progress achieved in 1923 included the electrification of part of the State railway system in the Nord department, the commencement of the construction of several 120,000 volt lines in the districts of the Alps, Lyons, Saint Etienne and the Massif Central; part of this system will transmit to Lyons the energy produced by the Viclaire works in the Alps. Other works in course of construction include the electrification of 8,800 kilometres of the Orleans, Midi and P. L. M. railway systems. High tension lines in service now total 9,000 kilometres, on 5,000 of which the tension is between 45,000 and 90,000 volts and on the remainder between 90,000 and 150,000 volts.

Public authorities are encouraging the creation of rural systems for the distribution of electrical energy in the country, but the consumption is often so small and dispersed that the companies find it difficult to make their undertakings financially successful without fixing the charge at a practically prohibitive figure. The Act of August 2nd, 1923, provides for State help in districts where the authorities agree to support a certain share of the cost. It is estimated that the electrification of the whole country will require another 15 or 20 years and an expenditure of between three and four milliard francs. The number of communes provided with electricity in 1913 was 4,000, and the total had increased to 10,000 at the end of last year. As regards the manufacture of electrical machinery and apparatus, the position of France is satisfactory, exports having been nearly double imports last year. Imports in 1923 increased by 30% in value as compared with 1922, but the increase in weight was only 5.7%. The depreciation of the franc is responsible for the higher prices paid for such items as copper, which has to be imported. In 1923, the weight of imports amounted to 7,600 tons, and this had increased in 1923 to 8,894 tons only, whereas exports in the same period rose from 10,000 to 16,716 tons. Last year exports exceeded imports by 7,822 tons and 116 million francs.

Russian Plans for Automobile Production.

Apart from isolated experiments, Russia has had no automobile industry of her own up to the present and has therefore been dependent upon importation for her requirements in this line. This dependence of Russian economy upon foreign industry directed the attention of the Soviet Government to the reconstruction of the home industry and especially to the adaptation of the "Amo" factory at Moscow for the production of automobiles. This factory was lately granted by the Commission for Systematic Economy a credit of 2,000,000 gold roubles with which to begin the creation of a Russian automobile industry. As from April 1st, 1925, it is expected that 50 small motor-lorries will be turned out monthly according to a design which has already been fixed upon as the most suitable for Russian road transport. A number of experts and specialists have been drawn from various parts of Soviet Russia to assist in the undertaking, and preparations for the commencement of full activity are well under way. The necessary staff is being selected with care and a contract for the supply of steel has been concluded with the Ischorski factory. Although it is only to be expected that the creation of an automobile industry on Russian territory will be fraught with many difficulties, if the projects of the expert advisers are persevered with, it is probable that the Russian market will be flooded with automobiles of Russian manufacture within the next few years, so that the difficulty may become one of sale rather than one of production. For the time being there are only the requirements of trusts, syndicates, individual factories and big undertakings to be supplied, for motor-lorries are hardly practicable for use by the agricultural associations on account of the present unsatisfactory state of the country roads. Before the use of motors for transport purposes can become general in Russia, a great effort must be made to bring the condition of the country roads up to a pitch which will permit of the employment of motor traffic by the peasantry and agricultural societies for the conveyance of grain to the railway stations. A revival in building activity would also greatly help in the sale of motor-lorries. For the present, however, automobiles will continue to be imported in considerable quantities.

Cotton in Italy.

In connection with the celebration of the thirtieth anniversary of the Italian Cotton Association, which has just taken place, some instructive statistics were prepared, which effectively summarize the present position of the industry as well as showing what great strides it has made. There are in the country at the present time 1,505 cotton mills. These contain 4,600,000 spindles, 130,000 looms, 100 drum printing machines, 5,000 machines for knitting stockings, 8,000 for making cotton hosiery, 1,000 for embroidery and 6,000 for *passementerie*. The country also possesses 123 spinning mills and 54 mills for the working of cotton waste and the production of imitation wool thread. The great majority (58.45% and 71.7% respectively) of the spindles and looms are in Lombardy, Piedmont taking second place with respective percentages of 24.53 and 18.6. It will thus be observed that the whole of the rest of Italy contains only some 17% of the spindles and less than 10% of the looms. The industry is served by 350 dye houses, which are capable of handling 440,000 lbs. of yarn daily. These are situated for the most part in Lombardy, Piedmont and the Campania. Prints are produced in 24 works, with a total of 140 machines, 100 of which are of the endless drum type. The average annual production of yarn is 300,000,000 lbs. although in very busy times as much as 450,000,000 lbs. have been produced. The industry turns out some 700,000,000 metres of cotton textiles yearly, of a total weight of about 220,000,000 lbs.

Employment is given by the Italian cotton industry to about 250,000 hands, of whom at least 75% are women and girls, and the annual wage bill amounts to 1,250,000,000 lire. Raw materials to the value of about 2½ milliard lire are imported annually, and the value of the production of the industry is put at four milliards, 40% being exported. Power is consumed to the total of 200,000

h.p. annually, and the greater part of this is obtained from hydro-electric sources.

Italy is, of course, entirely dependent upon foreign countries for supplies of raw cotton, and this circumstance weighs heavily upon the cost of production. As far back as 1904, a company was formed for the purpose of growing cotton in the Italian colony of Eritrea, and 12,000 metric centals were being produced yearly up to the time of the war in Lybia, which completely annihilated this promising venture. A new attempt has just been made by the Duke of Abruzzi, with a considerable amount of Government support, in Somaliland, and the writer has been informed that the trial growth leaves nothing to be desired so far as length and quality of staple are concerned. Another experiment is about to be made in Jubaland, recently ceded to Italy by England. The Government has promised to earmark a certain sum every year for the sole purpose of developing the growing of cotton in Italian colonies.

British Steel Trade.

The latest report of the National Federation of Iron and Steel Manufacturers shows that production of pig iron in August amounted to 588,900 tons, a figure lower than in any month since September, 1923. At the end of the month 173 furnaces were in blast, a decrease of two since the beginning of the month. Owing largely to the holiday period, the production of steel ingots and castings for August was exceptionally low and amounted to only 527,500 tons, a figure lower than in any month since July, 1922.

Imports of iron ore in August amounted to 525,300 tons, and of scrap iron and steel to 43,400 tons. Imports of iron and steel and manufactures thereof amounted to 173,700 tons of which 45,800 tons were blooms, billets and slabs, 28,300 tons sheet bars, 19,700 tons iron bars, rods, etc., 14,100 tons pig iron, 11,800 tons steel plates. Of the steel plates 6,000 tons entered the Clyde; of these 1,500 tons came from Germany. Of the total 173,700 tons imported 76,200 tons came from Belgium, 26,600 tons from Germany, 19,700 tons from France, and 16,400 from Luxemburg.

Exports of iron and steel amounted to 301,100 tons, of which 48,900 tons were galvanized sheets, 40,800 tons tinned plates and sheets, 41,200 tons pig iron and ferro-alloys, 24,600 tons tubes, pipes and fittings, 24,300 tons black plates and sheets, 23,700 tons steel bars, rods, angles, etc., and 19,100 tons plates and sheets not under $\frac{1}{8}$ inch thick.

Returns received from 159 firms, employing at the end of August 95,507 workpeople, show a decrease of 3,112 compared with July, and a decrease of 6,642 compared with August, 1923.

Effect of the London Agreement.

The reparations agreement effected at the London Conference has produced an entirely new situation as regards the German iron and steel industry, and this situation will be worked out when the negotiations for commercial agreements with Britain, France and Belgium have been completed. The effect on the conditions of the Ruhr industry has been more immediate. The economic evacuation of the Ruhr is expected to be complete very shortly and the customs frontier between the occupied and unoccupied territories was already abolished a month ago. The M. I. C. U. M. has been dissolved but the German industrialists affected have agreed to continue coal deliveries unchanged until the Dawes plan comes into operation, the price being fixed by agreement between the German Government and the Reparations Commission. Further coal deliveries will depend upon the results of direct commercial negotiations.

A general beneficial effect upon the German iron and steel industry is anticipated from the reparations settlement, and some improvement has already taken place in both the home and export trades. The Ruhr concerns, however, did not operate during August at quite the same level as in July, when the pre-war rate of production was exceeded. Prices have shown an upward tendency, and the general wages level in the industry has lately been increasing. In July last, the average hourly rate was 64 pfennigs for skilled workmen and 47 pfennigs for unskilled, as compared with basis rates of 50 and 40 pfennigs respectively in the original agreement of December, 1923.

Cement in Sweden.

After the festivities in England in connection with the 100th anniversary of the Portland Cement Company, many of those who had taken part went to Denmark, where a special cement congress took place from September 15th to 18th. Among those present were many directors of cement factories in England, Canada and the United States. Excursions were made to Aalborg and places in the vicinity, where the large Danish cement works are located, as well as to Malmo, in Sweden. It was emphasized at the congress that all the factories visited in England, Denmark and Sweden were using Danish machinery for the manufacture of cement.

Caffeine from Coffee Leaves.

According to the *Philosophical Journal* the idea organized in Sumatra to extract the caffeine from coffee leaves and that this industry, which promises to develop in importance, has only been started since the war. The coffee leaves may only have been commercially exploited for the extraction of caffeine since the war but it has long been known that it exists plentifully in the leaf. Although the Sumatrians appear to have been the first to discover the process of extraction they were by no means the first to entertain the idea as it was a matter of discussion in England "scientific journals" over a quarter of a century ago. Although as yet the process has been kept secret it cannot for long remain so, as there appears to be no gainsaying the purity of the product. In Sumatra the coffee berry is not much used as a beverage, all being reserved for export but we are told that an infusion of the torrified leaves are much used and that the use of the leaves for this purpose has grown to such an extent as now to be looked upon as an absolute necessity of life. Germany of late years appears to have been importing enormous quantities of coffee leaves from Sumatra and utilizing them in the same way and in some parts of Germany the coffee leaf infusion has quite taken the place of the berry. This coffee leaf trade has been going on for several years and rapidly increasing, and it is somewhat strange that we have heard little or nothing about it until recently. Research work has proved that the extract obtained from the leaves has undoubted nutritive properties, and a vast number of analysis have furnished data guaranteeing its safety as an article of diet with an entire absence of deleterious effects. The use of the infusion appears to have been long known to the natives of Sumatra who use it along with their daily food of boiled rice. It is now suggested that although the coffee berry cannot be grown profitably upon all soils and elevations the bush will grow luxuriantly upon nearly all kinds of fertile soils at low elevations in any tropical country and consequently the field for the production of leaves is almost unlimited. Queensland is a comparatively new coffee growing country but the coffee planters there have already shipped samples of their leaves to Hamburg where they have been favourably reported upon. The odour of the leaves is described as exceedingly fragrant and something like a mixture of tea and coffee. The infusion in boiling water produces a transparent dark-amber coloured liquor which used in the same way as ordinary coffee with the addition of milk and sugar, is said to be excellent. Nothing is said about cost of the article further than that it is a cheaper beverage than coffee.

Paper Consumption in U. S. A.

Compilations made by the Forest Service of the Department of Agriculture show that the consumption of paper in the United States, amounted to more than 8,000,000 tons a year, is greater than that of all other nations combined and, on a per capita basis, twice that of Great Britain. More than half of the supply is imported. A report based on a nation-wide survey of the country's pulpwood requirements states that the United States can produce its own supplies, by cultivating timber crops, utilizing timber species not now in general use and by increasing efficiency in production. For future needs, it is stated, it is necessary to cultivate only a relative small part of the 470,000,000 acres of forest land available and having a "higher potential productivity than that of any other pulp and paper country in the world",

Indian Economic Notes.

Some months ago the Calcutta Corporation set up a special committee to draw up a Primary Education Scheme. The Committee has now issued its report, the essence of which is as follows : In the 32 wards, there should be in the period of next 5 years at least (*a*) One model school in each ward. (*b*) One class I type school in each ward. (*c*) One borrowed building school. (*d*) 48 bustee schools teaching 2 batches of students daily so that they will be equivalent to 96 schools (3 per ward). (*e*) One training college for teachers capable of accommodating 100 students. This scheme provides for 30,000 pupils (approximately) on its completion. The total number of children of age 5 to 10 is 88,000 in Calcutta including the added areas. The total number included in the age grade 6-12 (limits fixed for the Corporation Primary Schools) would probably be a little over a lakh. This scheme, when in operation, will only provide for the percentage (50 per cent) that is likely to attend school on a voluntary basis, if we take account of another 30,000 provided for in other schools. If the aforesaid schools be opened in the next five years the requirements of the Government grant in respect of model and other schools would, the Committee thinks, be amply satisfied. The number of model schools can be increased by lowering the capital expenditure. The funds available at present are about Rs. 2 lakhs, the unspent balance of Government grant for capital expenditure ; Corporation grants about Rs. 25,000 certain Trust funds. In view of these funds the Committee recommends concentration this year on "borrowed building" and "bustee" schools of which there can be 16 each. In addition to the curriculum of subjects the Committee suggests a lantern lecturer for each district. It is also recommended that in each school, the pupils should be formed into City Cadets on the lines of Boy Scouts. Visits to neighbouring bazaars and railway stations should be organized as part of training. Music should be taught with the object of forming school choruses to be included in the curriculum. As a rule the medium of instruction should be Bengali except in exceptional cases. In such cases Bengali should be an additional language in the 3rd and succeeding years. Hindi should be taught as second language from 3rd year upwards. The outline of the scheme contains many useful hints which Karachi might well follow.

Exterminating Cotton Pest.

In the annual report of the Indian Central Cotton Committee a reference is made to the experiments that have been carried out to prevent the introduction into India of the American cotton bol weevil. It was necessary, in order to exterminate these grain weevils, to subject them to a concentration of hydro-cyanic acid gas. This concentration of such a poisonous gas was relatively a very high one, and its use without precaution might have been attended with some danger. Experiments were accordingly carried out to determine whether either the cotton or the gunny covering of a bale absorbed such a quantity of the hydrocyanic acid gas that, when the bale was subsequently exposed to the air, it might give off this gas in sufficient quantities to prove locally dangerous to the men who had to handle the fumigated bales of cotton. The experiments that were made tend to show that no danger from this source need be apprehended. After due consideration it was concluded that the most satisfactory method would be to use a barge, specially assigned for the purpose, into which the bales of American cotton could be discharged from the vessel bringing them into port. The bales after fumigation could then be landed. A practical fumigation experiment was accordingly arranged for, and 79 bales of American cotton were placed in a barge and suitably covered ; hydrocyanic acid gas was generated and distributed through the hatch by the Liston fumigation apparatus. Unfortunately, it was not found possible to prevent a very large leakage of the gas, the concentration of which fell almost immediately to a degree which was innocuous to the weevils.

Another experiment is being arranged in which it is hoped to achieve more satisfactory results.

PRICES OF FOODGRAINS IN INDIA.

The average level of wholesale prices of cereals and pulses in India on or about the 15th November, 1924, showed an increase of 1 per cent as compared with a fortnight ago. Prices of maize rose by 6 per cent, jowar 3 per cent and bajra 1 per cent, while those of wheat fell by 1 per cent and of rice by 2 per cent. Prices of barley, gram and arhar dal remained stationary. There was a decrease of 1 per cent in the prices of ghee and salt; but raw sugar (*gur*) increased by 2 per cent. As regards provincial prices, the noticeable fluctuations were as follows :— (1) In Delhi, maize increased by 44 per cent, raw sugar (*gur*) 24 per cent and jowar, 20 per cent; (2) in the North-West Frontier Province, maize declined by 10 per cent; and (3) in Madras, raw sugar (*gur*) advanced by 17 per cent. Prices of rice in Bengal and of wheat in the Punjab fell by 1 and 4 per cent, respectively.

NATIONAL ECONOMIC COUNCIL IN FRANCE.

An official committee has recently drawn up a preliminary scheme for the Statutes of the National Economic Council in France. The Committee proposes that the Council should be composed of 83 members representing the various social and economic forces of the nation. The Council will include representatives of the consuming public as well as of labour and of capital. The representatives of the consuming public will represent consumers' co-operative societies and purchasers' unions, the Association of Mayors and Union of Towns, the users of public services, fathers and mothers of families and mutual benefit societies. The object of the National Economic Council is to consider questions concerned with the economic life of the country to find solutions for such questions, and to propose to the Government the adoption of these solutions.

TOBACCO IN BIHAR AND ORISSA.

Tobacco is an important crop in one part of Bihar and is generally grown on a small scale all over the province, states the Report of the Agricultural Department, Bihar and Orissa, from 1st July, 1923, to 31st March, 1924. Its area is about a lakh of acres with an estimated yield of about half a ton per acre. Some enquiries have been received from abroad as to the possibility of an export trade owing to the preferential tariff on Empire grown tobacco. There are already several large factories in Bihar which manufacture light yellow types of leaf into cheap cigarettes. The ordinary heavy dark type of leaf is suitable for Indian needs but unsuitable for export. It has been suggested that a hybrid between an American type such as "White Burley" and pure *deshi* tobacco like Pusa 28 will give a leaf suitable for export. Experiments on these lines are being started but it is doubtful if anything can compete with the existing heavy yielding *deshi* tobacco. The new farm at Purnea will enable this problem to be taken in hand.

CO-OPERATIVE BANKS IN MADRAS.

The Government of Madras directs that the provincial and central banks shall, in respect of deposits and loans which they receive from individuals and institutions other than co-operative societies, provide for fluid resource in the proportion indicated below :—Madras Central Bank (Provincial Bank) : (1) Fifty per cent of fixed deposits falling due in the next thirty days; (2) forty per cent of current deposits; and (3) twenty-five per cent of savings deposits. Central Banks : (1) Fifty per cent of fixed deposits falling due in the next thirty days; (2) fifty per cent of current deposits; and (3) twenty-five per cent of savings deposits. The term "fluid resource" referred to above shall denote the cash balance on hand with the bank plus undrawn cash credit with the Imperial Bank of India plus 80 per cent of the market value (as quoted in the daily papers) of Government promissory notes.

A PROVINCIAL LOAN FUND.

One good result of the recent conference of Finance Members of the Central and Provincial Governments is the decision to institute a Provincial Loan Fund, which aims at the regulation of the terms, the rate of interest and the period of amortization of advances by the Central to the Provincial

Governments. The new Fund will make it possible for every province to formulate its own borrowing plans according to established rules, and will be the reservoir from which all advances from the Central to the Provincial Governments will be made. The Fund will be instituted on April 1st, 1925, at which date all outstanding liabilities of the Provincial Governments to the Central Government will be transferred to the Fund. The new scheme will assist the provinces to develope more rapidly under their own initiative, and is exceedingly welcome at this stage of India's progress towards self-government.

Indian Customs Revenue.

According to returns received in the Commercial Intelligence Department, the grand total of gross Indian Sea and Land Customs Revenue (excluding Salt Revenue) amounted to Rs. 455 lakhs during the month of November, 1924, as against Rs. 423 lakhs in the preceding month and Rs. 405 lakhs a year ago. The total revenue realized in the eight months, April to November, 1924, was Rs. 3,174 lakhs as compared with Rs. 2,663 lakhs in the same period last year. Import duties contributed Rs. 2,541 lakhs ; export duties Rs. 341 lakhs ; excise duties on cotton manufactures Rs. 152 lakhs, on kerosene Rs. 62 lakhs and on motor spirit Rs. 53 lakhs, and land customs and miscellaneous Rs. 25 lakhs. Increases were noticeable in import duties on sugar, cotton yarn and piece-goods, iron and steel and other metals, yarn and textile fabrics, other than cotton and silk, liquors, silk piece-goods and motor-cars and cycles; in export duties on raw and manufactured jute and rice ; and in excise duties on cotton manufactures and motor spirit. On the other hand, import duties on matches,railway plant, machinery and tobacco, export duty on tea and raw hides and skins, and excise duty on kerosene showed decreases. The protective special duties collected under the Steel Industry (Protection) Act of 1924 from the 13th June to the 30th November, 1924, amounted to nearly Rs. 134 lakhs, which are included with the figures of import duty.

Coal in India.

The report on the production and consumption of coal in India for the year 1923–24 shows that the total production amounted to 19,658,000 tons which is 647,000 tons or 3.4 per cent more than that in 1922–23, but about 3 million tons less than the record output of 1919. There was an increase in the output in all provinces except the Central Provinces, Assam, Baluchistan, the Punjab and Rajputana (Bikaner). The average value of coal was Rs. 7-7 per ton. The total estimated value of the output was Rs. 1,461 lakhs compared with Rs. 1,463 lakhs in 1922. The total number of men, women and children employed in coal mines in India was 200,918. The total number of fatal accidents was 363 giving a death rate of 1-81 per 1000 persons employed. The quantities of foreign coal imported into India fell to 625,000 tons valued at Rs. 187 lakhs compared with Rs. 454 lakhs in the preceding year. The total quantity of coal exported in 1923 was 136,600 tons as against 77,100 tons in the preceding year. Out of the total consumption of Indian and foreign coal the railway took 30.8 per cent.

Dr. Besant on University Reforms.

During the course of her Convocation Address to the University of Mysore, Dr. Besant said, "The fundamental reform needed in the schools is the teaching of all subjects in the mother tongue, and English as a second language in the Middle and High Schools, Modern English, largely taught by conversation, by much reading aloud of interesting books, stories, and short recitations. Indian history, written by Indians, must be studied, to arouse and cultivate civic emotion and broad-minded patriotism. The study of literature belongs properly to the Universities, is the material of culture rather than the education. To restore the village community with the village school, the village industries, a right system of land-holding and, where necessary, irrigation—these are tasks for Rulers and the Statesmen. But the work of a University is to prepare the young men and women of the Nation to take up these heavy duties, these mighty tasks, demanding noble character, trained brain, and loving, well-disciplined heart, and stalwart active body."

Books in Brief.

Short Reviews of Recent Books.

Currency and Exchange in India.

By B. Bhatnagar, M.A., F.S.S., Lecturer in Economics, University of Allahabad. Published by Ram Narain Lal, Publisher & Bookseller, Allahabad.

The author of this little volume calls himself an "amateur" though there is no trace of amateurishness in his writing. Leaving aside the Historical part, which is a resume of what is already known through Reports, Blue-books, and standard works on the subject, there is in the last chapter headed "Deductions", the best part of the criticism that the author has to offer on the Fowler Committee's work, the Gold and Exchange Standard. Here are a few words to show his position: "That it is possible to reach the ideal through the gold standard system, will be clear when we recall to mind the fact that we had almost reached it during the years of the War, had not the Government with callous indifference wasted India's accumulated gold resources as they did after the Report of the Babington Smith Committee by selling the Reverse Canals." Mr. Bhatnagar, who is not unknown to our readers, writes vigorously on the questions he has chosen for his theme and we would commend his book to all interested in them. The printing and get-up of the book deserve a word of praise.

The Industrial Evolution of India in Recent Times.

By Dr. Gadgil, B.A., M.Litt. (Cantab). Published by the Oxford University Press, London, Madras and Bombay. Price Rs. 4-8.

We have read this book with great interest. It deals with a subject of supreme importance—a sketch of the Economic history of India from about 1850 to 1914. The collapse of the old handicrafts, the change in the transportation system effected by the opening of the country, the commercialization of agriculture, the problem of population, and the connection between agricultural and industrial prosperity are all touched upon by the author with a sure hand. His prognostications of the future are of a revealing kind. The work before us is not only a closely worked out study of the past but also a suggestive diagnosis of what is in store. The book is bound to be widely welcomed for the comprehensive manner in which it deals with a period of Indian Economic history which is about the most difficult to handle. The presentation of the volume by the Oxford University Press deserves the highest praise. The printing and binding leave little to be desired, while the handy form it has been given will make it highly popular.

Hindu Gods and Heroes.

By L. D. Barnett, M.A., Litt.D. Published by Mr. John Murray, Albemarle Street, London W. Price 3*sh.* 6*d.* net.

This is a little volume of supreme interest containing a great deal more than what its name would indicate. It is a study on modern lines of old-world gods and personages. Their rise and fall is described in a manner simple and striking. Dr. Barnett's views are somewhat unorthodox when he deals with the Vedic gods but it cannot be said that his views lack support. The volume is included in the well-known "Wisdom of the East Series" and is worthy of attention at the hands of the general reader and the student of history and religion in India and the East generally. The book lacks an Index and we should like to see it included in the next edition, which cannot be long delayed.

Hymns of the Tamil Saiva Saints.

By F. Kingsbury, B.A., and G. E. Phillips, M.A. Published by the Association Press, 5, Russell Street, Calcutta.

The Tamil Saints of Southern India enjoy a popularity which, judging from their work and wanderings, is not by any means inexplicable. There is hardly a temple of note in Southern India that has not been seen or described by them in their holy (ruby-like) utterances. The study of their lives has long been an attractive subject

and it is pleasing to note a volume on them in the "Heritage of India Series". The authors of the work have done their work with care and attention. In the main their studies follow the traditional times. They are more literary than historical. The very order of the names shows that the study is conceived in the former and not the latter spirit, though we are free to admit that as far as possible the authors have kept their work within the limits of an historically accurate volume. In the next edition we should like to see the whole volume completely recast on the basis of a historical study of these great votaries of Siva and the work they did in the land of their birth. Such a study is a great desideratum still. We welcome this volume as an earnest of such a study.

The School of Accountancy.

We have received from the Conductors of the above School a copy of the Prospectus relating to it. It is so full of information and so well set down is the information that no one who ventures on a course of Accountancy can well afford, in our opinion, to neglect it. The founders of the School have done the right thing in thus attempting to draw wide public attention to their School. The need of India as regards good accountants was never more insistent than now, with the daily accretions that are occurring to Joint Stock and private Companies. So practical and comprehensive are the training facilities afforded by the School that many who have no examinations in view, take advantage of its Courses to acquire expertness in various commercial subjects, or for the purpose of general education. Accountancy students could not do worse than apply to the School of Accountancy (10 Essex Street, Strand, London W.C.2.) for full particulars of their Courses and terms. The School deserves to be better known in India.

Indian Library Journal.

We have received a copy of the October Issue of the *Indian Library Journal* published by Mr. K. Kodanda Ramiah at the Andhra Grandhalaya Press, Ltd., Bezwada. It is a neatly got up quarterly Journal published on behalf of the All-India Public Library Association. The issue before us is full of matter to prove useful to those interested in Libraries and Library work. The annual subscription is **Rs. 4.**

Acknowledgments.

1. The Brief Account of the Work of "The Servants of India Society".
2. Mining in Malaya, by G. E. Creig, A.R.S.M.
3. Rubber Planting in Malaya, by E. Macfadyen, M.P.
4. British Malaya: Trade and Commerce.
5. Sport and Motoring in Malaya, by J. H. M. Robson. Published by Malay States Information Agency, London.
6. Proceedings of the Economic Conference, 1924, Rs. 2.
7. Convocation Address by Annie Besant, D.Litt.
8. Artificial Limbs, by Dr. F. Martin.
9. Works Councils in Germany.
10. Family Allowances.
11. European Housing Problems since the War.
12. Economic Barometers.
13. Industrial Life in Soviet Russia, 1917—1923. (International Labour Office, Geneva.)
14. International Year Book of Agricultural Legislation, 1923. International Institute of Agriculture, Rome.
15. Bulletin of the Imperial Institute, No. 3, 1924.
16. Annie Besant, Servant of Humanity (New India, Madras).
17. Speeches of H. H. the Maharaja of Mysore, 1902—1920.
18. Annual Report of the Indian Merchants' Chamber for the year 1923.
19. Some Truths about Prohibition. The Free Temperance Association of India.

Topics in the Journals.

Lucknow University Journal
(Decr. 1924)

Human Geography and Economics—By Radha Kammal Mukherjee.

The Mysore Economic Journal

A Monthly Periodical devoted to the Discussion
of all Economic Topics of Interest

Vol. XI FEBRUARY 1925 No. 2

The Indian Economic Position.

By Lallubhai Samaldas, C.I.E.*

One of the objects of the economic association is 'to promote economic science and the dissemination of economic information as may be deemed advisable'. The reason for doing this can only be to utilize the knowledge so gained to improve the economic condition of our countrymen, many of whom, as you know, are living on the verge of starvation and who have to struggle so hard to obtain the bare means of livelihood that they have no time even for thinking of improving their physical or mental condition. That our country is poor, very poor, is a fact not contested by anybody. Those who have any doubts about it have only to refer to the figures of the comparative wealth of countries in the West or of Japan, on the one hand, and of India, on the other, and they will see how far we are behind all these countries in respect both of accumulated wealth and the average income. Those of us who move round in villages and try to keep their eyes open know that the vast masses of our countrymen eke out their existence in such a condition that they do not even realize that there is any better condition of life towards the attainment of which they can strive. The real tragedy is not that a large proportion of our countrymen are living from hand to mouth, but that they have been leading this pitiable existence for so long a time that they have lost even the feeling of discontent with the existing state of things or of the desire to improve their condition. If, therefore, our association and its annual conference are to be of any use, it is necessary that the information provided by the association and the discussions carried on at this conference should be followed up by action both by Government and by the public. It is very often said that 'knowledge is power', but knowledge can only be power if it is utilized in the best interests of the people. For the purpose of facilitating the utilization of such knowledge, it is necessary, I think, that the discussion at these conferences should be focussed on a few important points and the results of such discussions should be embodied in the form of resolutions, for the guidance of those who have to put them into execution. The president of the last conference referring to this question said that one of the difficulties in the way of embodying in the resolutions the considered views of such conferences was the 'fact that many members were Government officials and if they passed resolutions contrary to the policy of the Government, Government might find itself in an awkward position'.

I do not see any reason why the opinion expressed by professors of economics as economists should be binding on the Governments that employ them, nor do I think that our provincial Governments are so illiberal as to prevent their officials from giving free opinion on such an important subject as economics, provided, of course, such opinion is given without personal, racial or political bias.

* Part of Speech delivered before the Indian Economic Conference, 4th January 1925.

Politics and Economics.

I want to refer at some length to the question of political bias because it has been alleged, more often of late than before, that not only economists but even business-men and industrialists are apt to examine questions not from the economic but from the political standpoint. I have tried my level best to find out the line dividing economics from politics and I honestly confess that I have not been successful in doing so. The more one thinks of economics and its allied subjects, such as labour problems including unemployment, land revenue problems, social reform, trade, tariffs and transport, and even educational problems, one finds that there is so much overlapping of these subjects that it is difficult to say where one ends and the other begins. Even a purely economic subject like that of protection *vs.* free trade is bound to be examined in each country and decided not only on economic grounds but also on national and practical grounds. The policy of Imperial Preference, so strongly supported by the present British Government, is not based purely on economic principles ; its real *raison d'etre* is to draw the dominions nearer to England than they are at present —a political and not an economic standpoint. Or take the instance of economy in public administration and its effect on savings and consequently on the development of trade and industries. Both industrialists and politicians press for such economy and it is practically impossible to say that one does it on economic grounds and the other on political grounds.

Inquiry into Agricultural Problems.

It is but a truism to say that the economic condition of a country depends largely on its industrial development. When we talk of industrial development in this country, we sometimes fail to recognize the fact that agriculture is the staple industry of this country. The percentage of people living on agriculture proper and other allied industries is calculated by various authorities at something between 65 to 85 per cent, and, therefore, in any economic enquiry that is undertaken it is necessary to give the first place to agriculture. Not only should a careful examination into the existing condition of agriculture and agriculturists be undertaken but serious attempts should be made to find out the means of improving the same. The want of labour-saving machinery, the subdivision of land into uneconomic holdings, the lack of cheap and easy credit and the absence of scientific knowledge of agriculture, are the main reasons why agriculture in India is in so backward a condition. Any inquiry into agricultural problems will have to include an inquiry into the land revenue system of the country which varies from province to province. One of the first points that will emerge in discussions on the land revenue system is whether land revenue is a tax or rest. If it is a tax, as is argued by many scientific economists, then the question arises why even the owner of the smallest agricultural holding has to pay the land tax without any exemption, while incomes from sources other than land get exemption upto Rs. 2,000 per annum. In this connection, attention may be drawn to an anomaly that while a man who invests in land is not charged income-tax, another man who is more enterprising and invests in industries or one who invests in trade and commerce is charged an income-tax on the profits that he makes on such investments. In such circumstances, it is not surprising if the richer classes invest their savings in land and thus raise the price of land by undue competition and then try to get a return on their investment in land by rack-renting. Under the existing land revenue system and the Income-Tax Act while the smaller land-holders have to pay a proportionately large portion of their income as land revenue, the bigger land-lords have, on account of the exemption from payment of income-tax, to pay proportionately less. The problem, complicated as it is, will have to be considered in the light of the existing Hindu and Mahomedan law under which all sons have equal right in the property of their fathers and in accordance with which lands are being sub-divided into uneconomic holdings. The question ought to be tackled as a whole if there is to be a re-adjustment of the taxation of the country on a correct scientific basis ; and I hope the Taxation Committee, whose members I welcome here on your

behalf, will have the courage to do so in a scientific spirit and will not be frightened by the cry of the Hindu law of inheritance or vested interests being in danger. The problem of the sub-division of agricultural holdings, though a very difficult one, has been fairly successfully tackled in some provinces, and if economists, social reformers and other political leaders give a definite lead both to Government and the public in this matter, it is not incapable of solution in other provinces as well.

So long as land revenue forms a very large percentage of the provincial revenues, it is the duty of these Governments to adopt a policy of improving the economic, social and intellectual condition of those who live on the land and pay out of its proceeds. Unfortunately, till very recently, Government have followed the *laissez faire* policy of British statesmen and administrators as regards agricultural as well as other industries, and as a result things were allowed to drift, agriculturists being left entirely at the mercy of the village money-lender regarding financial facilities both for current agricultural expenses and for improving the land. The great famine of 1899-1900 was an eye-opener and some of these Governments have since then adopted various measures to help the agriculturists and provide scientific agricultural education to enable people to introduce modern and scientific methods of cultivation. While thankfully acknowledging what has been done in this direction, one cannot help saying that the needs of agriculture and agriculturists are not fully realized by high Government officials on the heights of Simla or the plains of Delhi. Even when men who have come in touch with agriculturists as district officers are transplanted to these heights, they very soon forget their old friends, for 'out of sight out of mind' applies in this case as in many others. If high Government officials had understood their duties to agriculturists, they would not have opposed the amendment to the Imperial Bank Act which wanted to empower the bank to extend to co-operative banks, the facilities which it was authorized to grant to joint stock banks. So long as this attitude towards agriculturists continues and there is no change in the mentality of the men in charge of money power at the headquarters, there is no possibility of any appreciable advance in the condition of agriculture and no chance of agriculturists getting from the soil what their brethren do in other advanced countries. I know this is politics and not economics but I cannot help referring to the policy of Government in so far as it trenches on and affects the economic development of the country. Talking of the general policy of Government towards agriculturists, one cannot fail to mention the existing heavy indebtedness of agriculturists and the necessity of adopting measures, both legal and financial, to eradicate this evil as far as it is possible to do so. The establishment of land mortgage banks somewhat on the lines of the Landschaften of Germany and of conciliation boards with power to examine into old accounts of the *sowcars* are some of the measures that suggest themselves to me as likely to prove useful if debt redemption is to be taken up on a systematic basis. Before passing on to other subjects, I desire to urge both Government and legislative bodies to use the villagers' money in improving villages and not in beautifying district towns, or provincial capitals, or the Imperial city of Delhi.

Problem of Unemployment.

One of the results of the adoption of any policy aiming at the prevention of sub-division and fragmentation of lands will be to reduce the number of persons dependent on the land and thus to increase unemployment in villages. Two remedies suggest themselves to me, namely, the development of cottage industries and the drawing of those who are in need of employment to industrial areas, or to such agricultural areas as require more men than are available in that locality for intensive cultivation. While the colonial Governments of Ceylon, the Federated Malay States, Mauritius and even British Guiana spend money on immigration agencies for the purpose of recruiting unskilled labour, no systematic attempt of this kind has been made by any Indian provincial Government, except that of Assam in the interest of tea plantations. At present, excepting the

statistics prepared by the Bombay Labour Office, there are no regular and exact figures of unemployment in the provinces. The first necessity is the preparation and publication of such statistics. The industries departments must then, in consultation with district officers and the co-operative department, find out how many of these people can be employed by the development of the old and the starting of new cottage industries. When this work is done they will be in a position to know the number of men for whom provision has to be made outside the villages, either in their own provinces or in others. If there is co-ordination between provinces, it will not be difficult for any province to find employment for its unemployed in other provinces. It is only after all efforts have been made to find work for the unemployed in our own country that we can think of emigration to other colonies as a remedy for unemployment.

While the problem of unemployment in reference to unskilled labour does not appear on the face of it to be very difficult of solution, the problem of the unemployment of the middle and the lower middle classes requires very careful consideration to enable correct remedies being devised. The educational policy of Government is to a certain extent responsible for creating or increasing the number of this class of unemployed, and while one feels the necessity of modifying and recasting the entire system of education, one would not be justified to say off-hand as to how and to what extent the policy should be modified. Industrialization on a very large scale, with State aid wherever necessary, and the establishment of a large number of technical schools with a technical institute at their head, have been looked upon as two measures which are likely to meet the needs of the large number of educated and semi-educated young men of the middle class who find difficulty in obtaining suitable employment. This evil of unemployment will go on increasing unless industrialists, politicians, educationists and Government join hands and make an earnest effort to find out the remedies and adopt a bold policy of economic reconstruction.

Industrial Development.

Although the necessity for industrialization has been preached from all platforms and also in the press, and by none so consistently and ably by the distinguished president of last year's conference, Government have, till very recently, closed their ears to all such appeals. As a result, excepting the cotton industry in Bombay and the jute industry in Bengal, no large industry has been able to face foreign competition. The Government of India have imitated and carried out the orthodox free trade policy of Britain forgetting that India's industries were wholly unorganized in the modern sense. John Stuart Mill's dictum about the necessity of protecting *infant* industries was completely ignored, and even when Government appointed the Indian Industries Commission, the terms of reference did not include an inquiry into the tariff policy of the Government. It was only after a policy of protection was adopted by Britain during the war that the eyes of Government were opened to the necessity of similar action being taken in this country and the Montagu-Chelmsford Report frankly acknowledged that the majority of educated opinion in India was in favour of protection and that Britain could not stand in the way of India's industrial progress. The appointment of the Fiscal Commission was the first tangible result of this change in the angle of vision. A long time, however, elapsed before the recommendations of that commission were carried into effect and as a result of this delay the premier iron and steel industry in the country is to-day in a precarious condition. Unless Government are more responsive to the industrial needs of the country and show greater active sympathy towards new and infant industries, it is impossible to secure sound and rapid progress in the industrial development of the country. That a sympathetic provincial Government can do a great deal towards assisting struggling new industries will be seen by studying what the Bihar Government and their director of industries with his board have been able to do in this direction.

Protection, whether in the form of import duties or bounties, and even State aid cannot and will not by themselves bring about

industrialization of the country. The first requisite for the establishment of industries is an enterprizing spirit. This spirit is not entirely absent from our country as can be seen from the industries already started by us. The strength of this spirit is in a sense a barometer of the success or failure of new industries and if the industries at present struggling for existence come out successfully through their present trials, we are sure to see a considerable strengthening of the enterprizing spirit amongst our countrymen. Another difficulty in the way of the establishment of new industries is the absence of trained and well-qualified men to work them. The establishment of technological institutes in the provinces for training men for industries that could suitably be started in these provinces, appears to be an ideal solution. This, however, means both time and money. I would suggest that till such institutions are established, the various local Governments should send out students, not one or two but by dozens and scores, to various countries to receive such theoretical and practical training as will enable them to handle local organized industries on their return. This, of course, will be only a temporary remedy, but it is a necessary one during the period of transition.

Banking Facilities.

The industrial development of a country depends to a very great extent on the banking facilities that the industries can obtain. In this country there are three different classes of banks over and above private firms of bankers or shroffs, namely, (1) the Imperial Bank of India formed by the amalgamation of the old presidency banks, (2) the exchange banks and (3) Indian joint stock banks. None of these is in a position to work as an industrial bank, and the one bank that was started with that object in view has been obliged to stop business and amalgamate itself with an existing commercial bank, owing to circumstances over which the promoters had no control. The need for a special type of bank to finance new industries was recognized by the Industrial Commission.

Increase of Capital.

It is a well-known fact that there is scarcity of floating capital in this country during the so-called busy season, that is, when the export trade in agricultural products is brisk and when large sums of money are required to finance the purchase of these products. This difficulty hampers trade and adversely affects the economic situation in some of the provinces. Temporary inflation of currency is one remedy and is sometimes resorted to. The other remedy which has so often been pressed upon the attention of Government is the transfer to this country from England of India's balances under whatever heads they may stand in Government's account books. If this suggestion is carried out, it will not only ease the money market during the busy season but this extra money will be of very great use to commerce and industries during the whole year. This money will be able to earn a higher rate of interest in India than what it gets in England and will thus increase the income under the head 'interest' of the Government of India. It is difficult to understand why Government have not accepted this proposal which has been pressed on their attention by individual Indians as well as by Indian business associations for a number of years.

Economy and Retrenchment.

Another method that would lead to the increase of working capital for commerce and industry is the practising of private and public economy and thus increasing savings under both heads. During the present times of trade depression and slump in the money market, an appeal for private economy is hardly necessary, for many of us who might have been extravagant during the boom period feel the necessity of severe economy to make both ends meet. A great deal, however, still remains to be done as regards economy in public administration and we all earnestly hope and wish that the central and provincial Governments will reduce their recurring and non-recurring expenditure and will try to bring down their total expenditure somewhere near its pre-war level. I believe that such retrenchment can be effected without undermining the efficiency of administration or without any cuts in the expenditure on

what are commonly called 'nation-building departments'. If this kind of economy is carried out in public administration, we shall soon find our Finance Members in the happy position of not only having balanced budgets but also being able to reduce taxation. While the adoption of such measures will take a long time to bear fruition, the work of examining into the incidence of the present system of taxation and recommending a readjustment of taxation on a scientific basis has been entrusted to the Taxation Committee by the Government of India. At the session of the Legislative Assembly held after the appointment of this committee was announced, a resolution was moved asking for the appointment of an economic inquiry committee. The resolution, in an amended form suggesting also the dissolution of the Taxation Committee, was carried by a majority of the House, against the wishes of Government. No action has till now been taken on this resolution and the Taxation Committee have begun their work and issued their questionnaire which extends over almost all aspects of taxation, but does not include any questions relating to an economic inquiry. When our association selected subjects for the writing of papers and for discussion thereon they realized that the recommendations of this committee will very largely affect the economic condition of the various classes of the population and they, therefore, put this item first on their agenda. The Taxation Committee have come here to listen to our discussion of these subjects, and I am confident the economists assembled in this conference will throw a great deal of light on the various problems raised in the questionnaire.

An Economic Enquiry.

While the second item on our agenda falls partly within the scope of the Taxation Committee's inquiry, it will form the main part of the work of the Economic Inquiry Committee which, I hope, Government will soon appoint as desired by the Legislative Assembly. In this connection it gives me very great pleasure to note that Prof. Shah, Professor of Economics, Bombay University, and his studious collaborator Mr. Khambhata, have collected almost all available information on the subject and after trying to arrive at figures about certain items for which no statistics are available, published their results in the form of a book, the 'Wealth and Taxable Capacity of India'. Here is very good spade-work done by independent workers in the field of economics, which will prove very useful to any committee that may be appointed by Government to inquire into the economic condition of the country. Although most of us want such an inquiry, we do not want it for the same reasons nor are we agreed as to how to conduct the work. As regards the former, each one wants it, because he thinks its results will justify his pre-conceived notions about the country's economic condition. My object in asking for such an inquiry is that after its results are known, it will be easier to suggest means for improving the condition of the economically backward classes. As regards the methods of enquiry I think that Government should appoint a committee of, say, two economists who have done similar work and two public men who have given serious thought to the subject, to examine all available sources of information and then lay down lines of work for checking the data and for collecting information on subjects for which no data are available. When the lines laid in the committee's report for such work are approved of by the central and the provincial Governments, in consultation with the standing finance committees of their legislatures, the Government of India should appoint a representative committee to carry on the inquiry, giving the committee power to co-opt members from the provinces.

Foreign Capital.

When the Steel Protection Bill was being considered in the Assembly, some members gave expression to the fear that foreign capitalists will take advantage of the situation created by the imposition of new duties and start concerns here to manufacture steel and take all the benefits arising from these duties and indirectly prevent the utilization

of Indian money and Indian talent. Reference was made to provisions in the British State Aid to Industries Act to prevent foreign capital taking advantage of the concession granted under the Act and amendments were moved in the Assembly on similar lines. All these amendments were withdrawn in favour of one moved by Mr. Motilal Nehru after the Commerce Member gave an undertaking that Government will appoint a committee to consider the question in all its bearings. That committee, consisting of elected members of both Houses of the central legislature and of the Commerce and Finance Members of the Government of India, has been appointed and has just begun its work. . . . . The Indian Fiscal Commission after hearing witnesses on this question and after discussing the matter could not come to any unanimous decision on the subject. The majority opinion is in favour of the free flow of foreign capital for industries where no special concessions are granted, and of slight restrictions where such concessions are granted; the minority, including the president, the Hon. Sir Ibrahim Rahimtoola, want definite restrictions being imposed in all cases. Prof. Coyaji, one of the members of the majority, has, in his lecture on the subject at Patna University, quoted various economic authorities in favour of allowing foreign capital to come in without any restriction. Equally competent economists in my presidency feel strongly that such an inflow is economically injurious to the best interests of the country. I do not propose to discuss the question from a theoretical point of view but want to put forward my views from a practical standpoint. That our country is poor and its accumulated wealth is very small compared to the wealth of other countries is a well-recognized fact. It is also well-known that this wealth, little as it is, is spread over such a large area and distributed amongst so many people—excepting of course a few Indian princes and big zamindars—that it is very difficult to draw money from one province to another. As a result of these circumstances, it is very often difficult to start large but sound industrial concerns without borrowing money from outside. The Tata Iron and Steel Company had to borrow from outside in the form of debentures and many other companies have to do the same. The question for solution is, therefore, whether the establishment of new large industires should be postponed till we get money within the country, either from individuals or from Government, or whether we should borrow foreign capital on our own terms. Speaking for myself, I am in favour of borrowing from outside at fair market rates of interest on condition that the borrowed capital does not become the master of the concern in whose interest it is borrowed. If the price asked for lending the money includes control I would not pay that price.

Mercantile Marine.

The Mercantile Marine Committee which was appointed by Government in accordance with the resolution of Sir Sivaswami Iyer moved in and accepted by the Legislative Assembly, submitted its report some nine months back. I was a member of that committee and would like to place on record my Indian colleagues' and my appreciation of the fairness of the attitude adopted by the chairman, Captain Headlam, and Sir John Biles in the examination of the various questions that came up before the committee, as also to their sympathy towards India's aspirations to have her own mercantile marine. The item on the agenda about the creation of an Indian mercantile marine was put there to enable economists to find out the amount of economic drain suffered by the country on account of all her ocean traffic—both passenger and freight—being carried in non-Indian ships. In the evidence given before the committee this drain was put at 30 to 70 crores of rupees by one witness while another witness said it varied from 20 to 70 crores from the pre-war times to the post-war period. Mr. Findlay Shirras says: 'The total expenditure for shipping services may accordingly be taken at 22.15 crores.' Mr. S. N. Haji puts down the gross earnings of the mercantile marine engaged in Indian trade at 57.08 crores. Probably one of the reasons for this is that while one economist gives the net drain to the country the other gives the gross figure. Mr. Haji has made his calculations on three different bases and arrives at practically the same results.

Survey of the Textile Fibres of the Empire.

Indian cotton, or rather the cotton grown in India, was displayed in all its commercial varieties at the Central Exhibit of Indian Cottons, arranged by the Indian Central Cotton Committee at the Empire Textile Conference held by the Textile Institute. Mr. S. K. Menon, who compiled the guide to the whole of the Indian Pavilion, was in attendance at this exhibit and explained the very large range of samples. Baled cotton, including the 500-lb. bales which Southern India still considers standard, and bales with the trade name and staple length clearly marked were open to inspection. Here it should be noted that of Punjab-American, 289 (staple $1\frac{1}{8}$″), 117,000 bales were grown last year. To this, however, further reference will be made later. For the present, it may be noted from the wall maps that the area under this crop is increasing rapidly and also that there has been a steady improvment in all Punjab-American crops during the last few years. The exhibit also included a series of measuring cards, graded in fractional parts of an inch, to the centre of each of which was pinned a cotton seed with the hairs carded and radiating from it. All the varieties, including the recent hybrids, American-Indian, etc., can be examined closely in this way and the length of staple and amount of lint clearly seen. The Bombay Arbitration Standards, lent by the East India Cotton Association, were displayed in the centre of the stand, while round the walls were maps, charts, and calendars illustrating recent movements of crops and trade. One of the maps contained a favourable augury for the future, as it illustrated the area of the Nasrat Canals which give promise of an additional 800,000 acres of cotton in the course of the next few years. From the export charts, it is interesting to notice that Japan took 48% of the total exported cotton last year and that Germany and Belgium were each better customers than Lancashire. The 1923 crop was 3,362,600 bales, of which the deliveries to spinners in this country only amounted to 89,890 bales.

Punjab.—Not far from the Central Cotton Exhibit was the Punjab Court, in which was the stand of the Punjab Agricultural Department. The silk exhibit was not striking, and it is rather surprising to learn that the silk area in the N. E. Punjab extends from Attock to Amballa, and that 15,000 lbs. of dry cocoons of the univoltine variety were sold in 1923. A little silk is reeled in Amritsar, but the majority is sold for export to Europe and to other parts of India. Apparently, the cultivation of the lac insect, which produces shell-lac, is a serious competitor of sericulture, as it entails little trouble and has often a better paying yield to the farmer than an equal area of silk. It is cotton, however, and not silk which the Department has next its heart as far as textile fibres are concerned, and the history of cotton in the Punjab, as told by Mr. Yusaf Ali who, with Mr. Milne, has worked for fifteen years at the improvement of Punjab cotton, is full of interest. Two main types of cotton are grown in the Punjab, but in spite of what might be termed a Government subsidy to growers of American in the form of extra water under the irrigation scheme, recent American seed importations have done little good in the Punjab. The cotton which has been most successful, and of which the famous 4F and 285F are resultant varieties, is that grown from seed imported from America about 1850, and which is now known as Dharwar-American. Before the Agricultural Department began to distribute seed on anything other than an experimental scale, Mr. Ali had already succeeded in producing, on his brother's farm at Resala, a long-stapled American cotton from selected seed of the old 1850 stock. This cotton, known variously as No. 15 Resala, and 15th Lancers Resala, became famous in the district, and other farmers hastened to buy the seed, so that in 1914, when the Department had only 2,800 acres of cotton planted, there were no fewer than 50,000 acres of American cotton in the area. This year there are about 1,000,000 acres down in American cotton—an increase of 30% on 1920, the best previous year. Mr.

Ali is of opinion that, when the canal system is completed, labour will have to be imported to deal with the cotton crops. He points out that the growing of the 4F, 285F, and similar cottons, makes a difference of from £2 to £4 per acre in the price obtained for the crop, which explains the willingness of the farmer to co-operate with the Department. The Department now controls almost all the cotton growing in the Province and is doing its utmost to improve character and to keep the best strains pure. Until quite recently, 6d. per maund (about 82lbs.) was paid to the good farmer who would undertake to grow Departmental seed under supervision. When the crop was gathered, it was graded by the Department and sold by auction on the understanding that it must be ginned under Departmental supervision and all the seed sold to the Department—a privilege which was paid for at the rate of 3d. per maund. Cotton containing more than 5% Indian might not be offered for sale at these auctions and the seed of grades A1, which was specially selected pure American, and A, which was all pure American, was the only seed which the Department would buy. The remaining grades B, containing 2% Indian, and C, containing 5% Indian, might be sold at the auctions, but the seed was not retained by the Department. The quality of Punjab cotton was therefore bound to improve. In this connection it may be mentioned that some already has an average staple of 11/5″. When it was discovered that farmers had mixed other seed with that supplied by the Department, the crop was not allowed to be auctioned at the Government sales. It must be remembered, however, that although the chief energies of the Agricultural Department are directed towards improving the quality of cotton, it is often necessary to continue the production of a short-stapled cotton when better types do not pay the grower equally well. The farmer is doing his best to work with the Department; but is often faced with natural conditions which leave him little option but to continue the growing of short-stapled crops. It is generally believed, by the men who are trying to raise the standard of Punjab cotton, that a good deal of mixing takes place before their products arrive at Lancashire mills. For this reason, the Department of Agriculture would welcome a movement whereby Lancashire spinners dealt directly with the Punjab. The Department is ready and willing to receive inquiries and, it is stated, will guarantee the quality of cotton purchased through its offices.

Mysore.—In the Mysore Court, silk, cotton and wool were among the exhibits. The annual production of raw silk is estimated at one million pounds and the actual area under mulberry cultivation is about 50,000 acres. The silkworm is of the poly-voltine species and the rearers are able to take from six to eight crops per annum. A good deal of the silk is reeled in the State, under cottage industry conditions, but where it has been reeled in modern filatures it is found to be equal to the best Canton silk. The Sericultural Department had prepared special cabinets to show the improvements made in the breed of silkworms in Mysore and the difference in quality between cottage and filature reeled silk. Some specimens of gold thread and lametta using the silk were exhibited and jacquard silks were also shown.

Many samples of cotton were shown, including some of long staple and, it was stated, that on the whole Mysore cotton yields a higher staple than the bulk of the Indian crop. The annual production is about 50,000 bales of 400 lbs. each.

Sheep-breeding is an important industry in Mysore, but exhibits chiefly consisted of woven materials and not fibre. The famous carpets produced in the Mysore gaol were worth inspection.

The Department of Industries and Commerce, Bangalore, had sent specimens of sisal hemp which thrives in the State. Sun hemp is also grown, chiefly as a green manure, but also for use in the making of bags and sacks. As in the State of Travancore there are many other forest fibres wihch possess commercial value but are not exploited owing to difficulties of extraction.

Travancore.—Dr. Kunjan Pillai, the State representative of Travancore at the Exhibition, is to be congratulated on the

beautiful display in the Travancore Court, which, although not of first importance to textile interests, should be mentioned. Here were to be seen samples of many fibres which, although as yet unknown to the European spinner, are used by native craftsmen in the production of coarse fabrics. Of some fifty different trees, reference may be made to *U. lobata*, Linn. yielding a fibre which, Drury says, can be substituted for flax ; the elephant rope tree from the soaked bark of which a fibre is extracted and used for making hats, schoolbags, and fancy table cloths ; the aloe, the leaves of which supply useful material for the manufacture of belting ; the tulip tree, with its soft branch fibre ; and the cocoanut palm, every part of which has commercial value. From the thick outer covering or "husk" of the cocoanut, a valuable fibre is extracted. The husks are steeped alongside river backwaters or near the sea beach where conditions of mud and water are favourable for "retting". They remain buried for a few months until they soften sufficiently to allow the fibre to be beaten out and separated from the pith and skin. This fibre is the basis of all coir yarns which are spun in the districts where retting takes place. The yarn is collected by dealers who pack it into neat and distinctive bundles and take it to commercial centres. The best varieties are those spun in Alpat and Anjengo, especially the latter, which produces a yarn worth £42 per ton—London value. As illustrating the importance of the industry, it may be stated that the exports from Travancore in 1921-22 were—coir yarn, 574,332 cwts. ; coir mats, 110,527 yds. ; coir matting, 2,541,049 yds. ; and cables, 438 cwts. Coir yarn is used in the manufacture of machine belting, of which some interesting samples were displayed in the Travancore Court.

United Provinces.—Here again the exhibits of textile interest were manufactured fabrics. Fine muslins, gold and silver embroidered work, carpets, quilted cotton, and Benares silks were shown in their many varieties. Although a good cotton of 1/61 in. staple has been grown successfully for many years in the Cawnpore districts, the cotton area is steadily decreasing owing to inadequate canal water supply.

Bengal.—Jute is the chief textile fibre grown in Bengal, but the exhibit of the Agricultural Department in the Bengal Court included other best fibres which might well become commercially important. The area under jute in the Ganges-Brahmaputra delta has increased by 400% during the last forty years, chiefly owing to the increased demand from Europe, and especially from Great Britain. Jute is sown from early March to June and harvested in August and September before the seed is fully formed. The earlier it is cut, the whiter and more glossy will be the fibre and the poorer will be the yield. Late cutting gives heavy yields but much coarser fibre. Jute is retted by the smaller farmers in any sort of water-hole near the area of cultivation, but, on the big estates, wherever possible, a clear stream is used. Retting takes from 10 to 15 days, according to the temperature of the water, relatively low temperatures giving a cleaner fibre but of a greyish tint. Average crops per acre have been variously estimated at from 10 to 15 maunds, and at the lower estimation the crop is still very profitable.

It's a Hard World.

"The Root and Branch", published by B. C. Forest Service, has the following :—

A year has ..	..	365 days
Sleep, 8 hours ..	..	122 ,,
This leaves ..	..	243 ,,
Rest, 8 hours ..	..	122 ,,
This leaves ..	..	121 ,,
Sundays ..	..	52 ,,
This leaves ..	..	69 days
Saturdays ½ days ..	..	26 ,,
This leaves ..	..	43 ,,
Lunch 1½ hours ..	..	28 ,,
This leaves ..	..	15 ,,
Annual vacation, 14 days ..	..	14 ,,

which leaves One Day, on which (being Labour Day) nobody works.

Burma's Industrial Finance.

By "Sentinel".

The Industrial Finance Committee, Burma, was appointed by the Government of Burma (Ministry of Industries) in consequence of a resolution moved in the Burma Legislative Council and accepted by the Local Government that "A Committee be appointed to consider how far the recommendations of the Indian Industrial Commission regarding the grant of financial assistance by Government to industries should be adopted in Burma, and the measures, legislative and other, which are necessary for the purpose." The terms of reference to the Committee were confined to the resolution. The report of the Committee contains no reference to the report of the Indian Industrial Commission. In the absence of any such reference, it is necessary first to summarize briefly the recommendations of the Commission on the points at issue. The suggestions made by the Burma Committee can then be examined in the light of those recommendations.

The Commission classified Industries into "Cottage," "small organized," and "large organized" industries. The latter are described as industries that have markets extending far beyond the boundaries of a single province, or even of India, the inception and management of which give rise to questions of inter-provincial or even of international trade which can best be handled by an Imperial organization. It may be noted that, with the possible exception of the teak, rice-milling and petroleum industries, there is no industry in Burma which may suitably be included within this category.

As regards "small organized" industries, the recommendations of the Indian Industrial Commission are based on the supposition that there is in each province a Director of Industries. Although the Commission envisages the establishment in the future of industrial banks which may ultimately grant the credits required for small industrial undertakings, it suggests that in the interim Government might suitably grant financial assistance to small businesses on the recommendation of the Director of Industries and his expert staff. In certain cases, this assistance might suitably take the form of a cash credit with an ordinary commercial bank backed by a Government guarantee. In other cases, direct loans in the nature of loans made under the Land Improvement Loans and Agriculturists Loans Act might be granted. All schemes for Government loans to industries, however, should be worked with the object of handing over the business to a suitable banking agency in due course. It may be noted here that the temporary appointment of Director of Industries in Burma, which was sanctioned in 1920, was abolished in 1922, when certain of that officer's activities were transferred to the Superintendent of Cottage Industries, who is also a Joint Registrar of Co-operative Credit Societies.

The Industrial Commission, in considering the grant of financial assistance to "Cottage industries," emphasizes the importance of co-operation, but suggests that in cases where co-operative organization was impossible, suitable small loans might be issued on the recommendation of the Department of Industries.

In the case of large industrial undertakings, the conditions which the Commission would impose as precedent to the grant of Government aid are much stricter. The advisability of giving aid would depend on the extent to which the starting of the enterprize in question would be of benefit to the general public, and not merely on its probable advantage to the promoters of the industry. The assistance might suitably be given, for instance, in the case of an industry the establishment or improvement of which would supply an existing deficiency in the interests of national safety, or in the case of an industry of which the extension was desirable in the interests of consumers or producers over a wide area.

The Burma Committee, at the outset of its report, draws a distinction between "major industries" and "cottage industries", though it does not analyse these terms with the exactitude of the Indian Commission. As

regards major industries, the Local Government agrees with the recommendation of the Committee that, although those connected directly or indirectly with agriculture would probably have first claim on financial aid, other selected industries might suitably be supported if a reasonable scheme for their development were put forward. Various methods by which financial assistance could be given are examined. The Committee expresses a preference for three forms of assistance :—

(1) Exemption from rent and royalties and leases of land on favourable terms ;

(2) exemption from taxation of the profit of new undertakings and the remission of import duties on articles used in connection with industries ; and

(3) loans.

As regards the first of these methods, the grant of leases of land for industrial purposes outside and within towns is regulated in the case of State land in Upper Burma by rules framed under the Upper Burma Land and Revenue Regulation, 1889, and in the case of land at the disposal of Government in Lower Burma by rules framed under the Lower Burma Land and Revenue Act, 1876, and the Lower Burma Town and Village Lands Act, 1898. Discretionary powers in respect of the fixing of rent are vested, in certain cases, in the Revenue authorities issuing such leases. Again, the Burma Municipal Act, 1898, and the Rangoon Municipal Act, 1922, give powers to municipalities to exempt any description of property from taxation under certain conditions. There does not therefore appear to be any immediate need, remarks the Burma Government for futher action by the Local Government, in this connection. The questions of exemption from taxes on the profits of new undertakings and of exemption from any tax on industry (including import duties on articles used in an industry) are bound up with the principles governing Imperial Taxation and Tariff Policy, and lie outside the existing scope of the Burma Government's powers. The Local Government is not therefore prepared to move in the matter until specific need for action is called for in any particular instance. The recommendations of the Committee in respect of the conditions which may suitably be laid down as precedent for the grant of loans to industrial undertakings are accepted. It may be observed that these conditions were followed, in essentials, in the case of the recent loan made to the Burma Spinning and Weaving Company.

The majority of the Committee recommends the establishment of a permanent Advisory Board of Industries. The Local Government prefers, however, to accept the minority recommendation that Boards should be constituted *ad hoc* by the Minister-in-charge with special reference to the subject under discussion. The suggestion that book-keeping and commercial arithmetic should be taught in all Government technical institutions will, it is stated, be further examined, while the question of the inclusion of these subjects in the ordinary curriculum of all schools will, it is noted, be placed before the Committee on Secondary and Intermediate Education which is at present sitting.

Of the major industries examined in more detail by the Committee, the salt industry is reviewed at some length. After explaining the importance to the province of local salt production, the report discusses the factors militating against the development of the industry, and in particular, expresses disapproval of the salt policy dictated by the Government of India. Various local measures of relief are suggested, but the Committee recommends a complete re-examination of the salt policy as applied to Burma. A note on the salt industry and salt revenue was prepared recently by the Financial Commissioner which states in detail the steps taken by the Local Government to improve production and to assist the producer to get his salt to the market. Of the local remedies suggested by the Committee, the Local Government is advised that loans to salt manufacturers would require special legislation, and is not convinced that at this stage they would be suitable. A co-operative scheme of storing salt in bond in Rangoon was tried during the years immediately following the Great War, but proved a failure. The advisability, however, of establishing duty-free fish curing yards will be further examined.

As regards the salt policy in general, the Government of India have been addressed on the subject of provincialization of salt; and until a decision has been reached, the salt problem in Burma cannot be satisfactorily attacked.

Stress is laid in the report on the potentialities of Burma for the development of white sugar manufacture. To these the Local Government is already fully alive. The Agricultural Department is experimenting in a number of areas with different species of cane, and is endeavouring to foster production by introducing improvements in the plant for the extraction of jaggery. The Local Government while not disposed at present to take active steps for the promotion of the establishment of factories is prepared to give sympathetic consideration to applications for the grant of large areas in suitable localities for the planting of cane and for aid, financial or otherwise, in cases where it might appear to be necessary. Again, should encouragement be needed for the building up of the paper industry, the Local Government would, we are told, consider carefully the grant of assistance on the lines recommended in the Committee's Report.

The remaining major industries reviewed by the Committee are pottery, the manufacture of rubber articles, cotton spinning, cotton and silk weaving and glass making. None of these has as yet been developed on a factory basis to any important extent though some of them provide employment as "Cottage industries" to a considerable number of people. The Local Government, however, recognizes the possibility of their future development, particularly in the case of cotton spinning and weaving, and recently gave practical demonstration of its belief in the potentialities of that industry by the grant of a large loan to the Burma Spinning and Weaving Company. If a good case were made out for the grant of assistance to any of the other industries mentioned, the Local Government would be prepared to give the matter sympathetic consideration on the lines indicated by the Committee.

The last chapter of the Report deals with "Cottage industries" regarding which the Committee observes that the present policy of Government appears to be suitable. It is hoped that the scheme for District Weaving Schools, which is at present under the consideration of the Development Commissioner and the Superintendent of Cottage Industries, will lead to a pronounced extension of the knowledge of improved methods of weaving. Further consideration will be given to the Committee's suggestion that pottery might conveniently form a section at the Government Technical Institute at Insein; there is at present a Pottery Expert, entertained on a temporary basis, who is examining the pottery industry and making experiments with a view to its improvement. This officer is under the control of the Superintendent of Cottage Industries. It is not considered desirable, at present, to attach him permanently to the staff of the Government Technical Institute. The Local Government trusts that the Committee's apprehensions regarding the future of the lacquer industry are not well-founded. Sanction has recently been accorded to the establishment, as an experimental measure for a period of three years, of a Technical School for Lacquer Workers at Pagan. The School will be under the control of a Lacquer Expert. . . . . The expansion of "Cottage industries" depends largely, as observed in the Committee's Report, on improved organization for marketing combined with standardization of products, and the Superintendent of Cottage Industries will be directed to pay special attention to these problems. The Local Government, however, is inclined to the view that marketing organization must ultimately depend on private enterprize; in this connection it is hoped that the efforts of Burma Industries, Limited, will be successful in bringing Burma wares before the notice of the public more prominently than has hitherto been possible. In recommending local legislation to stop malpractices in connection with the short weaving of yarn, the Committee appears to have overlooked the fact that such cases fall within the purview of the Indian Merchandise Marks Act, 1889, and of Sections 417 and 487 of the Indian Penal Code. The remedy lies in prosecution under these enactments, and no special legislation seems to be necessary.

The German Export Campaign.

Energetic Measures to Assist Foreign Trade.

[*It is a matter of common knowledge that the success of the Dawes plan depends upon the rehabilitation of German industry, and that export markets for German goods are a necessity. The following informative review of the measures taken by the Government to promote export trade was compiled by the United States Trade Commissioner in Berlin, and was presented to American businessmen in a recent issue of "Commerce Reports".—Ed.*, M.E.J.]

The German Government is sparing no pains to assist German export trade in every particular and to improve the national foreign trade balance. A campaign for increasing German sales abroad is now under way. The Government is aiding by increasing credits, cutting freight rates and communication charges, reducing onerous taxation, lowering the discount rate on foreign bills, negotiating new commercial treaties, reorganizing the consular and diplomatic services, and establishing closer relations with German Chambers of Commerce in foreign countries, organizations which have at all times had a semi-official character.

Private firms are coming into line. The gold discount bank has reduced its rate to 8%; the Ruhr Coal Syndicate lowered its prices on October 1st by 10%. The Nitrogen Syndicate has reduced its prices to 20% below pre-war; while the Potash Syndicate, after its agreement with French producers, announces a more liberal discount policy to small customers in foreign countries. The Government is attempting to see to it, that, with an increase in the purchase of foreign supplies such as may be expected to accompany the granting of credits to German industry, the export trade not only keeps pace with imports but even exceeds them.

Return of Confidence Helpful.

In this effort the Government is now being assisted by a wave of confidence that has swept over business circles. June and July marked the bottom of the recent period of business depression. Stocks and bonds, which had been steadily falling from the beginning of the year, recovered to within striking distance of their January 1st prices. The soaring interest rates, which went up over 60% for time money, have now subsided to 15% on the Berlin money market. The monthly bankruptcies reached their peak in July, with a figure of 1,148 and 568 new receiverships, making a total of 1,716. The September figures were 817 for bankruptcies, 245 for receiverships—a total of 1,062 and a drop of 10% from the preceding month and only a little above the monthly pre-war figures, which generally ranged from 900 to 1,000.

All these signs are causing German businessmen to look forward with more hope to the future. This optimism in business circles is impressive. The Press reports that over 800 Germans visited New York in June and July in the hope of securing credits, and that an average of 200 a month journeyed to London for the same purpose. The number of German firms that are willing to go anywhere in the world and undertake any kind of new business is remarkable. Outgoing steamers from Hamburg to North African ports are now crowded with German commercial travellers and concession hunters on the way to Morocco.

Commercial Arbitration Tribunals.

The German Government at present is holding out special favours in the exploitation of the large German market as a means for exacting similar concessions from other important countries. Commercial arbitration tribunals for settling disputes out of court have been established for trade with Czechoslovakia and Switzerland.

The functions of these tribunals have been taken over by a central board which simplifies the procedure necessary to obtain Government export permits. There still remains a list of articles whose export is prohibited, except under license, but the present tendency is to reduce this list. On the whole, everything is now being done by the Government to favour the speedy shipment of German goods abroad, while, on the other

hand, the wall of import restrictions against foreign goods is stoutly maintained. Prospects are that no large breaches will be made until a high protective tariff has been put into effect.

German Chambers of Commerce Abroad.

One of the methods the Government is now employing to stimulate sales of German goods abroad is the enlargement of German Chambers of Commerce in foreign countries. A convention of these Chambers was held in Berlin in September, at which delegates from all over the world were present. The German President, Chancellor Marx, and Foreign Minister Stresemann welcomed the delegates, who reported upon conditions in their several organizations to the following effect:

In the Far East, German business is rapidly coming up to its pre-war standard. In 1913, 3,000 German firms and individuals were represented in China and 1,000 in Japan; about 200 German businessmen were in Siberia. The latest figures are now 2,500 for China and 700 for Japan. The Government has promised to establish a new consulate at Hongkong and it is understood that a new commercial treaty with China is likely to be negotiated in the near future.

In South America, German Chambers of Commerce have been combating the bad reputation sustained during the inflation period. No great change in personnel, as compared with pre-war times, is reported from this quarter. The associations in Buenos Aires, Valparaiso, Mexico City, and Habana are specially active. German goods are reported to be coming back into favour in Cuba, which, in 1923, bought them to the extent of $8,100,000, Cuba shipping to Germany goods worth only $600,000. German representatives in Cuba number 400.

In responses to the speeches of oversea representatives, officials of the foreign office promised a reorganization of the consular service, putting into the field more men with business experience to replace officials of the routine type and as speedy as possible a return of the service to its pre-war size.

Easier Money Facilitates Exporting.

The action of the Reichsbank in reducing its discount rate is a great help to exporters. They are now able to take customers' drafts in payment for German goods shipped to leading foreign countries and discount these drafts with the Reichsbank at the same rate which prevails in the country on which the bills are drawn, provided the rate does not fall below 5%. Current interest rates on the domestic market are now 15% per annum for time money, so that the exporter has a big advantage over the merchant who is selling to domestic buyers only.

As a result of the hand-dyeing and calico-printing experiments carried on by the Industries Department for two years continuously, two firms in Ahmedabad and one in Surat have taken up the manufacture of calico prints on the improved methods. There is a distant opening for this work in the presidency, as a possible outlet for Bombay products can be found in their use by the people of East Africa. Samples of the hand-printed cloths imported into East Africa from Manchester and Holland have been secured through the Indian Trade Commissioner in East Africa. These are generally 46 in. wide and 66 in. long, and known as *Khangas*. They are supplied in various styles. Attempts are being made to interest Indian firms and Bombay mills which do machine printing in this trade.

Major-General Maurice asserts in a recent article in the *Manchester Guardian* that the Imperial Conference is being urged to vote a proposal that the British garrison protecting the Suez Canal should be quartered elsewhere than Cairo. Major-General Maurice traverses the argument that Egypt is the essential link for Eastern communications and points out the increase in size and speed of ships tends to make the Canal route as compared with the Cape strategically less indispensable. He is of the opinion that as regards an air route it will probably pay us better to co-operate with the French and establish a route *via* Syria than attempt to build one through Egypt. He concludes that in any case Zagazig (Egypt) has better claims to a garrison than Cairo.

Agriculture in Burma.

By "Son of the Soil".

The Report on the Operations of the Department of Agriculture, Burma, for the year ended the 30th June, 1924, bears ample testimony to the continued attention paid by the Department to research and experiment.

The work on paddy is concentrated at present at the Mandalay and Hmawbi Stations. At the former, it is in the hands of the Economic Botanist and his staff; at Hmawbi, it is supervised by the Deputy Director. At Mandalay the number of cultures handled during the year of report was 136 local varieties and 10 exotics obtained from Lousiana, U.S.A. Work with the local paddies consisted of selection from among the varieties grown in Shwebo, Sagaing, Kyaukse, Katha and Lower Chindwin. The object of this work is two-fold; firstly, the isolation of short-lived strains suitable for Mogoung areas and secondly, the production of types suitable for the irrigated tracts of Shwebo, Kyaukse and Mandalay. The two latter districts have been already served to a certain extent by the Theikpan, Ngasein and Theikpan Taungdeikpan selections of the Mandalay Farm. In the case of Shwebo, however, there is still some doubt as to whether the Taungdeikpan of Mandalay is the best paddy for the Shwebo canal area or not, and for this reason a selection of the paddy known asNgayunwa is being tested against it. The Economic Botanist is also endeavouring to isolate a suitable paddy for the Tanegyan tract of the Ye-u canal. Only one kind of paddy called Ngathalun which has apparently an abnormally strong root system has been found to thrive in the very stiff soil of this tract. Unfortunately this gives a red rice and is therefore not suitable for the outside market. The Economic Botanist has been able, by selection, to get a white rice out of this, and it is intended that this white grained Ngathalun when multiplied will replacethe original red-grained variety. The work of the Botanical section at Mandalay which has now been in hand for the last two years is reaching a stage when the varieties can be put under field test and final selection done before distribution takes place.

At Hmawbi the work is planned with a view to the isolation of slightly earlier types than the original selections of Ngasein 8 and Ngasein 10. The whole trend of paddy growing in Lower Burma is in the direction of the abandonment of the long-lived larger-grained Kaukkyi paddies, and these are gradually giving place to shorter-lived Kauklats of the Ngasein type. During the year under report, 139 single plant cultures were under observation at Hmawbi. One new selection which was found superior in yield to all the others, namely, Ngasein C. 19-26, has now reached field scale and tests of this can be made in the districts next year. This variety looked extremely well in the field last year and stood out strikingly from the other varieties. This, at present, is the department's main hope for large parts of the Insein and Pegu District which require a shorter-lived Kauklat variety. It has also the advantage of having been highly recommended by the millers. During the year, 49 single-plant cultures were transferred to the Akyab Agricultural Station. These were made two years ago from samples of Arakan paddies on which selection was done at Hmawbi so as to save a year before the farm at Akyab could be opened.

At Hmawbi, the Deputy Director in collaboration with the Agricultural Engineer has made a very careful study of the cultivation of paddy land. As a result of this it has been found that the work done by the ordinary Burmese plough is very ineffective. It does not turn a proper furrow with the result that large patches of the field are left untilled and the subsequent labour of harrowing is increased. To solve this problem, it was decided to design a new type of plough which would turn a proper furrow and which could be fitted on to the body of the ordinary Burmese plough and be produced at a price within the reach of the ordinary cultivator. This attempt has been successful although the work is not quite complete. Three designs of plough share have been prepared and the shares have been cast by a local firm. The Deputy Director reports that a pair of

Burmese bullocks has no difficulty whatever in drawing this plough and that after a little training, the workmen at Hmawbi have become very skilful in handling the implements. He has held two ploughing competitions which were entered into with great enthusiasm by the farm ploughmen and outside cultivators as well. The Deputy Director's calculations show that by the use of this plough a saving of Rs. 1-4 per acre on the cost of paddy cultivation can be effected. The question of drilling paddy *versus* broadcasting has also been taken up and the Agricultural Engineer and the Deputy Directors concerned asked to attempt to design a drill which will work in the soft mud of paddy fields. This experiment, however, is not at present complete.

The Economic Botanist is continuing his study of the sesamum varieties at Tatkon and in particular he is making an investigation into the causes of the conditions known as Pothe or "Green Flower" which often seriously damages the sesamum crop. The question of drilling *versus* broadcasting sesamum which gave very promising results some years ago at Tatkon appears to be largely affected by the character of the season and from what has been seen of the drilled plots at Tatkon this year, it is not certain, however, that the practice of drilling is necessarily always superior to broadcasting. The experiments will be continued, however, until more light is thrown on the method. At Tatkon 22 single-plant selections from early varieties and 36 from late varieties are under observation.

Experiments with erect groundnuts were conducted at Padu, Mahlaing, Tatkon, and Allanmyo Agricultural Stations. The Deputy Director of Agriculture, Northern Circle, reports that at Padu, Spanish groundnuts were proved to be definitely superior to Burmese in oil content. They can be harvested earlier and as a result the cultivator by growing some of both kinds can have his work better distributed over the year. Grown as a mixed crop with Cambodia cotton a gross profit of Rs. 174 per acre was obtained and grown mixed with Pesinngon, a gross profit of Rs. 140.

At Mahlaing, selection of the indigenous types of cotton was continued during the year. The best selected Shan strain has a staple length of ·88 inches while the best selected Wagale strain has a lint length of ·75 inches and a ginning outturn of 37 to 41 per cent. In the increase plots these strains are reported to have given yields varying from 800 to 1,200 pounds to the acre. These strains are now ready for commercial valuation and spinning tests.

A number of crosses made in 1921 in an attempt to combine high yield and ginning outturn with length and quality of staple were raised in the F2 generation and careful observations made of each individual plant. It is too early yet to report whether any of these selections will be suitable for distribution or not.

There is little to report under this head. At Padu, Tatkon and Mahlaing, Japanese beans (*Phaseolus vulgaris*) and the Moki Lima bean from Egypt were tried for their suitability as a substitute for *Pebyugale*. Owing to the failure of the late rains, however, the experiments were, in general, abortive. New supplies of seed have been called for from America, Egypt and Japan and the work will be carried on continuously. It is necessary to point out that all varieties of *Phaseolus lunatus* (which species includes *Pebyugale*) possess as a specific character the faculty of producing prussic acid. There is little doubt that formation of the prussic acid forming glucoside is increased when the growth of the plant is interrupted for want of rain. Thus, during the past year, the Agricultural Chemist found that all his *Pebyugale* selection which had previously given very low yields of prussic acid, suddenly gave double the amount owing to the failure of late rains. *Phaseolus vulgaris* varieties on the other hand seem never to produce prussic acid, but the difficulty with these is that the species seems more adapted for cooler climates and not well suited to the conditions under which *Pebyugale* is grown on the *yas* of the dry-zone. For these reasons the problem of replacing *Pebyugale* is not so easy as it would appear, and patient and continuous work must take place if the problem is to be solved.

Selection work with Pelon, Pedisein and

Pesinngon was continued and sufficient seed of these selections was obtained for a yield test. In the case of gram, the collection mentioned in last year's report was continued at Padu. The Deputy Director states that the previously selected variety of the seed of which extensive distribution has already taken place is the only really wilt-resisting variety. The Economic Botanist and his staff have made crosses between white-flowered susceptible gram and pink-flowered immune gram. The object here is to get an immune variety with a white flower, the white flower to serve as a mark to distinguish the variety from other kinds in the field.

Work with this crop was conducted at Hmawbi, Tatkon and Hopin. At Hmawbi, out of 15 varieties of sugarcane, J.213 Striped Mauritius, P. Mauritius, Fiji and B.3412 give the highest outturn of jaggery per acre. At Tatkon the canes were unfortunately badly attacked by termites and this matter is receiving the attention of the Entomologist. The yield tests and varieties at Tatkon, in order of outturn, were as follows :—J.213, B.3412, J.247, B.376, Ashy Mauritius, Toungoo Yellow, and Pyinmama Red. This would appear to indicate the superiority of the exotic varieties to the local ones and corroborates the previous year's results. In a spacing test at Tatkon, an interval of four feet between the rows yielded the best results. Ratooning with a second year crop was not found profitable here. At Hokin, the work of the previous years was continued. The work at this station has resulted in a small number of cultivators taking up the crop for selling purposes but it has had a much more important consequence in that the results got on the Hopin Farm have induced a Rangoon firm to take up 6,000 acres of land and establish a white sugar factory at Sahmaw, two stations further up the line. This is the first venture of the kind in Burma and is a direct result of the experiments performed by the Agricultural Department.

Under this head, there is little to report as the Department has not yet been able to get a proper tobacco farm. In March, however, Mr. Odell, Deputy Director of Agriculture, West Central Circle, was sent on deputation to Bengal in order to see the methods which the Bengal Agricultural Department are employing in their tobacco work. A scheme for tobacco work in his Circle is being prepared and will be put before Government shortly. The variety known as Pusa 28, seed of which was distributed some years ago, is finding a certain amount to favour among tobacco cultivators in the Thayetmyo and Prome Districts. The real problem of tobacco work, however, is the curing of the leaf and it is hoped that the scheme which is now being prepared can be made to include the appointment of an experienced tobacco curer. There is no doubt that the services of such a man would be of great use in this Province.

The small station of standing trees acquired by Government at Akyab has now been taken in hand by the Deputy Director, Mr. Watson. To begin with a vigorous campaign against the rhinoceros beetle has been started and some of the older and badly attacked trees were cut down. Arrangements are also being made for the numbering of the trees, the preparation of a proper plan showing each tree in the area, and the taking of individual yields per tree in order to show the effect of different manurial and cultivation treatment. For this purpose, the area of 10 acres has been laid out in acre blocks. During the year, the Director of Agriculture made two tours to Arakan and after consulting with the local officials, it was decided to open another coconut station of 20 acres at Kyaukpyu. The sanction of Government has been obtained to this project and lay-out operations will begin as soon as the land has been acquired. Coconuts in Arakan and in Burma generally are sold green and the manufacture of copra is unknown although large amounts are imported into Burma. The Agricultural Engineer has designed a small oil-pressing outfit to deal with copra and it is hoped to get some one to instal such an outfit and start the oil-pressing industry on the same lines as that for sesamum and groundnut in Upper Burma.

A special Commissariat for Inland Trade is being established in Russia.

Medical Relief in Rural Bombay.

The question of providing medical aid in the mofussil is one that has caused considerable anxiety both to Government and to local authorities. So far as the Western or modern scientific system of medicine is concerned, the existing agencies—Government Hospitals and Dispensaries, Medical Institutions carried on by various Missions and private individuals, and independent practitioners—only touch the fringe of the population of rural areas and small towns with the result that large numbers of people have either to rely on the services of persons professing to practise the indigenous system of medicine or go without medical attendance altogether.

Compared with the total population, the number of qualified practitioners is very small. Yet, owing to the tendency of medical men to collect in large towns, partly because of the amenities afforded by the large centres of population and partly because practice in the smaller towns is not in most cases remunerative, the medical profession in Bombay City and the larger mofussil towns is in fact overcrowded. The problem therefore that has confronted Government has been :

(1) How to devise a system whereby the overcrowding in the large cities can be avoided and practitioners induced to settle in the smaller towns ; and

(2) How to provide some form of medical relief to the people in the smaller villages where it would never be a paying proposition for a medical practitioner to settle.

Figures given in the Census Report of 1921 show that there are in the Presidency 26,731 villages and towns. Of these 16,788 have a population of less than 500 ; 8,764 have from 500 to 2,000 inhabitants ; 1,102 from 2,000 to 10,000 inhabitants ; and 46 from 10,000 to 20,000 inhabitants ; the remainder having a population above 20,000.

In many districts the Local Boards are unable to provide funds to any fresh scheme for medical relief, while the demands upon Government revenues are increasing every year. Two schemes, however, have been worked out, one of which is actually in operation and the other still under consideration in its financial aspects, which will, it is hoped, serve to show whether this difficult problem of medical relief in the mofussil is economically soluble.

The first scheme provides for the training of village workers to be known as Pratamopacharaks, in elementary medicine. The training will be such as to enable the persons so trained to recognize some of the more important diseases and administer simple remedies—to dress wounds and ulcers and to treat conjunctivitis. The Pratamopacharaks would be given some idea of what is generally known as First Aid work as well as the main principles of hygiene. They would be instructed to send cases, which they were not capable of dealing with themselves, to the nearest hospital or dispensary.

After careful consideration it has been decided that the most suitable persons to be trained for this work are primary school-masters. This would ensure the workers being drawn from the educated classes and at the same time do away with the objection that might be raised from medical men that Government was creating a new class of half-trained men who might pose as doctors.

As an experimental measure two classes have been opened at Poona and Bijapur and 5 school-masters are being trained at each place. The training will last for 2½ months and will be undergone at the Civil Hospitals in the towns mentioned. When the training is completed, the village workers will return to their villages and their services will be available to the inhabitants. An allowance of Rs. 10 per month is to be made to each trained man and he will also be given a supply of drugs. This scheme is intended to be applied to villages with from 1,500—2,000 inhabitants.

The second scheme is intended to deal with the problem of the larger villages and small towns and the proposal is to give subsidies to qualified medical men in order to induce them to set up practice in villages and small towns.

Applicants will be allowed to choose their own localities provided that there is no hospital or dispensary or any medical parctitioner with a qualification recognized by the Bombay Medical Council established within 5 miles.

Equipment to the value of Rs. 600 will be provided free by Government at starting and become the property of the practitioner on the satisfactory conclusion of the term laid down.

An honorarium of Rs. 50 per month will be paid for the first year to be reduced by Rs. 10 in every subsequent year until the agreement expires.

The practitioner will provide his own drugs, etc., and charge fees at his own discretion for medicine and treatment.

The doctor will be expected to reside at least three years in the place appointed subject to whatever holidays may be allowed. If he leaves before his time, he will have to refund the cost of the equipment furnished by Government and a security will be required from him in this respect.

It is proposed to make a start with 50 medical graduates, but the details have not been worked out and the scheme is not likely to come into operation for some time.

Gifted Children in Industry.

A new experiment of a somewhat novel character has recently been undertaken in the United States in connection with the discovery and advancement of gifted children in industry.

Industry, the organ of the Associated Industries of Massachusetts, contains in its number of 4th October 1924 a report of a committee on "Gifted Children in Industry" set up in 1923 by the Executive Committee of the Associated Industries. The terms of reference of the Committee were, firstly, to find out whether there were in the factories of the members of the Associated Industries some boys and girls with such conspicuous talents and strong character that further education might be expected to make of them industrial leaders or persons of marked and unusual usefulness to the community; and secondly, if such children were discovered, to make recommendations as to any plan for providing financial assistance for them, in order that they might secure the training which would best develop their talents.

The Committee reported to the Executive Committee on 5th September 1924.

It should be noted at the outset that the standard fixed by the Committee was extremely high, and that it interpreted its terms of reference to mean that it was instructed, not to find boys and girls who could be so improved by further education that they would be capable of occupying perhaps more important, but yet subordinate, positions, but rather that it was its business to discover the extremely exceptional child who, if properly trained, would be likely to develop into an unusual and commanding personality, and who in the course of time could be expected to assume very large responsibilities in industry and, to quote the words of the Committee, to "make contributions to it such as more commonly expected from nothing less than a genius".

The Committee conducted a survey in five factories of the Associated Industries, which survey furnished the names of 20 young men and one young woman. The Committee then conferred with the faculty of the Graduate School of Education at Harvard University, the Dean of which, Dr. Holmes, offered it the assistance of his crops of trained psychologists and investigators.

Following a preliminary survey, the Harvard investigators reduced the 21 to 6, and it was arranged that these six should be subjected to certain psychology and intelligence tests. Five of the six were boys; one was a girl.

As a result of these tests, all six young people were reported to be young persons of promise, ambition and demonstrated ability. Furthermore, all of them were rated as Class A in the U.S.A. Army Alpha Intelligence

Test. Harvard reported that any of them would repay any money that might be spent on providing further education. Four of the boys were classed just at the line of the "A" class, the fifth somewhat above it. The girl, however, was considerably very much superior to any of the boys.

Conclusions of the Committee.

As a result of this report, the Committee conferred with Dr. Holmes and his associates, and came to the conclusion that, although they rated very highly, according to the tests, none of the five boys seemed to possess the qualities for which the Committee was looking, in accordance with the admittedly high standard which it had adopted. The Committee thought, however, that the girl was fully equal to this standard.

At this point, however, the Committee was met with the difficulty that the young woman in question could not properly be called a "gifted child in industry," in view of the fact that she was already employed as a school teacher and had done certain substitute work in the Employment Department of a large industrial corporation. Her ambition was apparently to go through a medical school with special reference to children's diseases and to industrial medical work. Her preparatory work was not, however, completed, and she saw no immediate prospects of resuming it for want of financial support. The Committee did not consider that it had, in strict accordance with its own terms of reference, discovered in its preliminary tests any "gifted children in industry" of the type for which it had set itself to look. It therefore recommended that the question of furnishing adequate financial assistance to the young woman in question should be left to individual initiative, and it expressed the hope that individuals connected with the Associated Industries would furnish whatever financial support was necessary for the continuance of her studies.

As regards the main question with which it was created to deal, the Committee was of opinion that, although it had not as yet discovered any "gifted children" in the factories of its members, it had nevertheless discovered signs, that there might be such children. It held that, with the experience which it had already gained, it might in the future expect to approach the problem more directly and effectively than it had hitherto done. It did not at the moment feel that it had reached the stage when it could formulate a general plan for the raising of money for the training of such gifted children as it might discover. It was, however, convinced that such boys and girls might be discovered, and that if it could be of assistance in setting such young persons on their way in life it would render a great service to the next and perhaps to the present generation.

The Committee therefore recommended the Associated Industries not to let the question drop, but to authorize it to proceed further to survey other factories of the members, under directions to report further to the Executive Committee in due course.

Investigations to Continue.

The Executive Committee authorized the Committee to continue its survey as it should see fit, and the General Manager was authorized to receive and transmit any money which might be contributed by members of the Association for the assistance of the young woman referred to in the Report.

The "Electrical World" gives an interesting account of the way in which the engineers of the Southern California Edison Co., adapted an existing transmission line to deal with 100,000 h.p. additional power. The original operating voltage was 150,000. The height of the steel towers was increased 10 ft. and the line was re-insulated to make it suitable for 220,000 Volts. The extraordinary thing about the operation was that all the work was carried out while the line was alive. The towers were lifted bodily and an extension of the proper height erected underneath. The re-insulation consisted of increasing the number of insulators in each string from eleven to thirteen. The work of raising 1,400 towers took six months, and in the same time the insulators on 480 circuit routes were dealt with. This conversion has effected a great saving in cost over the erection of new lines to carry the additional power.

Economics in the West.

A Year of Business History.

London, 1st January, 1925.—The year just closed has been in some respects a period of disappointment, inasmuch as the revival in trade has been of smaller dimensions than might have been expected from a study of the indications at the close of 1923. The course of events, however, has not been without its redeeming features, and the year may be looked back upon with a degree of satisfaction tempered by conservatism bred of four years' trade depression. Progress, though perhaps small, has undoubtedly been registered, and the conditions of trade are to some extent more favourable now than was the case twelve months ago. Furthermore, the political situation, particularly on the continent, is much more satisfactory than a year ago, and a distinct advance has been made towards stability.

The foreign trade figures are at first sight somewhat disconcerting. Net imports of merchandise for the twelve months to November 1924 reached £1,127 millions, as compared with £972 millions in the preceding twelve months, while exports of British produce at £794 millions were only £25 millions higher in the period to November 1924. There was thus an excess of imports, to be balanced by invisible exports or by borrowing or sale of investments, of £333 millions as compared with £203 millions in the earlier period. The explanation of the large increase in the import surplus lies in part in the fact that much of the new investment of capital for overseas purposes has not yet been translated into exports of goods. In addition, the tendency for foreign securities issued in New York to be resold in London has been less marked in 1924. On the contrary, sales to foreigners of investments formerly held in Great Britain have been on a larger scale than formerly.

The details show that of the increase of £177 millions in gross imports as between the two twelve-month periods £63 millions is accounted for by food and £72 millions by raw materials. The imports of cotton and wool registered particularly marked increases, suggesting that at least a part of the rise is due to restocking in preparation for a larger output from British factories. Imports of raw cotton in the first eleven months of 1924 amounted indeed to 13 million centals, as compared with 10½ millions in the corresponding period of 1923, but the change in wool imports was due almost entirely to price variations. On the other hand, exports of manufactured goods show a substantial increase, particularly in the case of cotton yarn and manufactures. Coal exports, as might be expected, were much lower on account of the resumption of operations in the Ruhr area.

The output of coal has declined from 278 million tons in the year to November 1923, to 270 millions in the period to November 1924. Similarly pig iron output has fallen slightly and steel shows only an insignificant increase. The number of furnaces in blast was lower at the end than at the outset of 1924, while the number of shifts worked in the iron and steel industry was only slightly higher. The iron and steel, engineering and shipbuilding industries are still in a state of acute depression, which fact, combined with the setback in the coal industry, goes far to neutralize the improvement registered in other branches of business activity. It should be noticed, however, that the motor and cycle trades are in a healthier condition, while the iron and steel and engineering industries are likely to derive much benefit from orders to be given out by the railway companies. The cotton industry has shown a marked revival, and the hours of work in mills spinning American cotton have recently been substantially lengthened.

That some general improvement has taken place is apparent from the figures of unemployment. The percentage of insured persons unemployed in November 1922 was 12·7, a year later it was 11·5, while in November 1924 the figure was 11·0. Similarly the trade union percentage has fallen from 14·2 to 10·5 and to 8·6. Sheffield, Manchester and other important industrial centres have experienced declines in the

number of workers idle. The number of unemployed, however, is still considerably above its normal pre-war proportion, and according to the Ministry of Labour 1,169,100 persons were on the live register at employment exchanges in Great Britain on December 22. It must not be assumed that all these are, so to speak, abnormally unemployed. The absorption of some 500,000 to 600,000 of the total would probably represent a return to full productive activity, but the rate of absorption will need to be considerably more rapid than in the past twelve months if this state of affairs is to be reached in the reasonably near future.

Railway statistics confirm the statements already made. In the third quarter of 1924 the monthly average of coal carried on British railways was 16½ million tons as compared with 17¼ millions a year earlier. Merchandise however totalled 5½ million tons as compared with 5 millions while minerals other than coal showed a similar increase. The aggregate of freight traffic was therefore practically unchanged.

When financial indications are referred to, the outlook is somewhat brighter. Bank clearings are an indicator of current business activity so far as they relate to actual business transactions. The total turnover at the London Clearing House in 1924 was 7·9 per cent higher than in the previous year, and 1·3 per cent higher than in the boom year of 1920. The most important element in the increase, however, is to be found in the more frequent turnover in the short loan market & increased stock exchange activity. Nevertheless, some improvement in trade is indicated by the increase in the Country Clearing at the London Clearing House by 3·1 per cent on the year, the rise being almost confined to the latter half of the year. The turnover at the ten provincial clearing houses also showed appreciable increases, with the exception of Newcastle and Sheffield and it may be noted that these two centres are closely identified with the iron and steel, engineering and ship-building industries.

The figures however must not be regarded in too sanguine a light, since the difference in the level of prices in the two periods is sufficient to account for the greater part at least of the increase. The relevant banking statistics show rather more pronounced movements. The average statements of the nine London Clearing Banks, whose activities are confined to England and Wales, showed aggregate advances of £732 millions in November 1922. Since that time advances have risen steadily until in November 1923 they stood at £750 millions and a year later at £811 millions. At the same time acceptances rose from £65 millions to £87 millions and to £96 millions in November 1924. Inasmuch as the greater part of domestic trade is financed by advances the figures are significant, but at the same time it should be noted that bill holdings were considerably lower in November 1924 than a year earlier.

Money rates again indicate some revival in the demand for accommodation for business purposes. The average rate of discount for Treasury Bills in December 1924 was £3 14s. 2d. per cent, 9s. 6d. higher than a year before, and 24s. higher than in December 1922. Other rates have stiffened similarly, while the Bank rate has remained unchanged at 4 per cent since July 1923, despite efforts made in the summer to bring about an increase with the object of enforcing a rise in sterling relative to the dollar. The Bank of England reserve position was as a fact stronger at the end of 1924 than a year earlier. It is true that the ratio fell in the last two returns of the year to 14·7 and 11·5 per cent respectively, but this was largely due to a transfer of bank notes to the currency note reserve account to allow for a temporary increase in the currency note issue above the maximum fixed by the Treasury Minute of December 1919. The average ratio for December was however higher than in December 1923. When the Minute was issued, prohibiting a fiduciary issue above the maxium reached in the preceding year, it could scarcely have been within the purview of its authors that Christmas Day might fall on a Thursday and that the Bank of England ratio might be abnormally reduced by the call for currency to meet holiday requirements extending over a long week end. It is well that Christmas comes but once a year, and even better that Christmas

Day can fall upon a Thursday only once in every five or six years.

The outstanding event of the year, however, particularly in its latter part, has been the rise in the value of sterling in terms of dollars. In January the pound sterling stood at an average of 87½ per cent of parity with the dollar. A marked rise set in during August, and at the close of the year higher rates were touched than ever before since the unpegging of the exchange in March 1919, bringing the rate to within 3 per cent of parity. Apart from the increase in the quantity of money, as indicated by the rise in deposits, a powerful factor in this movement is to be found in comparative money rates in New York and London. The excessive cheapness of money in New York encouraged the holding of liquid balances in London, where higher rates could be earned, and by means of which a premium might be secured on re-exchange into dollars through a rise in the sterling rate. There was so to speak an investment premium on sterling. Another important influence lies probably in the heavy external loans which the United States have granted in the past year. The low rates to be earned in America, combined with the high rates offered for capital in Europe, were sufficient to overcome the previously well-marked aversion of American investors from foreign, and particularly European, securities. Furthermore, the implementation of the Dawes plan and other schemes of reconstruction called for financial support on an unprecedented scale, while the part played by American nationals in the formulation and carrying out of the plans undoubtedly encouraged American investment in the countries stricken by capital shortage. The result was that loans were floated in New York by governments, public authorities and private concerns, credits were granted by American financial institutions, and little was seen of the well-known tendency of American investors to re-sell to London securities subscribed for on the other side. Germany, France, Belgium, Hungary and several other countries have shared in the proceeds of the outflow of American capital, and it may be said that the year 1924 marked a step forward towards free trade in capital and the repairing of the machinery of financing industry in the impoverished countries of Europe.

All this, however, was dependent to some extent on a revival of confidence in the stability of Europe, and undoubtedly the Dawes plan and the League of Nations schemes of reconstruction have accomplished a great deal to increase American faith in the revival of the Old World. To some extent this may have reflected itself in purchases of sterling in anticipation of a rise to parity, such purchases themselves assisting the rise.

The strong upward movement has given rise to widespread discussion as to the imminence of a return to parity with the dollar and to the gold standard in this country. Such an event would have important consequences. In the first place, it would involve a movement in prices in Great Britain and the United States towards a closer proximity than exists at present, probably taking the form of a rise in the American price level. Secondly, and as a later development, it might call forth a movement of gold to this country, increasing the metallic reserve at the Bank of England and permitting a widening of the cash basis for the extension of credit to industry and trade, a result which could scarcely fail to act as a stimulus to business in this country. But thirdly, and as a more or less technical matter, the question would arise of the advisability of amalgamating the Bank of England and currency note issues. Until the gold standard has been permanently reinstated the question is of minor importance, but immediately that stage has been reached it will have to be faced and the whole theory of our currency system reviewed in the light of the change in conditions as between pre-war and post-war days.

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Canadian Trade and Finance.

Montreal, January 1st, 1925.—While the year 1924 was in general one of poor business for Canada, it cannot be regarded as an entirely unsatisfactory period in our business history, since the foundation for a real and substantial improvement in Canadian trade was laid during the twelve months in question. The development referred to took place in the wheat market. This is the commodity which has been responsible for business depression in Canada for years past. Most of our other leading natural industries have not been in at all a bad position. While the demand for lumber fell off during 1924, it could not be said that the lumber trade was in a state of acute depression. The paper industry has been active, the mining industries in Ontario and British Columbia are doing well, the fishing industry in British Columbia experienced an improvement and, in the Maritime Provinces, had a good year. Briefly, reports on many of our great natural industries were either favourable or reasonably good during the twelve months under review, but the benefits arising from activity in these lines were almost entirely offset by continued unsatisfactory conditions in the Prairie Provinces, where close to twenty-five per cent of our population is located. Poor business in these provinces was the main cause of industrial depression in Eastern Canada and for the short time operations of manufacturers of textiles, iron and steel lines, boots and shoes, clothing, furniture and agricultural implements.

The low price of wheat was a result of world production being somewhat in excess of the world's requirements. This situation is now changed. There is a shortage of wheat rather than an excess supply. The effect on prices has been striking. The Dominion Bureau of Statistics index number for grains rose from 114·2 in October, 1923 to 178·9 in October, 1924. Unfortunately, the rise in price found Canada with a short crop. The Prairie Provinces harvested only two hundred and forty-five million bushels, the yield per acre having been lower than at any time since 1919. The rise in price has been so substantial that even with this low yield, the farmers in the West will in general improve their position, but the improvement will not be sufficiently marked to result in a general revival of business throughout the Dominion, although it may well cause a moderate increase in the volume of sales in many lines. That a general revival will materialize during 1925 is not by any means certain, but we can claim that the chances are somewhat in our favour. Last year, the United States had an exceptionally good wheat harvest, while Canada had an exceptionally poor one. What we must hope for in 1925 is that world production of wheat outside of North America will not increase substantially, and that in North America there will be a more equitable distribution of good results.

While the above view makes our prospects for good times look somewhat problematical, it must be remembered that reference is made only to the current year ; so far as the more distant future is concerned, there is little to fear, if we conduct our affairs properly, because Canada can produce wheat efficiently and cheaply, and we may expect that the price of this commodity will not for any long period stay below a figure at which our Western farmers can operate satisfactorily. Current prices are not by any means the minimum necessary for prosperity. If the yield per acre were good, the price of wheat could be substantially below the present quotation, and still leave a profit in the business. Considerable space has been devoted to this subject, because it is a very important one for Canada at the present time.

The United States.

In the United States, activity in the early part of 1924 was followed by a reaction which did not culminate until the summer. The index number of the volume of manufactures declined from 111 in February to a low of 86 in June, and marked improvement did not come until September, when the number rose to 99. The trend of commodity prices was somewhat similar. The Index Number of the Bureau of Labour Statistics fell from

152 in February to 145 in June, since when it has risen to 152 in October, with a further increase probable in November. Exports of commodities from the United States during the year were large, while gold continued to enter the country in substantial amounts until recently, and this combined with generous open market purchase of bills and securities by the Federal Reserve Banks to produce an exceptionally large supply of loanable funds, and to bring interest rates down to unusually low figures. While production in basic industries was declining, retail sales held up well, and stocks on hand were not in general burdensome, so that a more optimistic feeling in regard to the future of business was soon translated into an increase in manufacturing activity and a rise in commodity prices.

The business improvement of 1922-23 in the United States was strongly supported by the purchase of railroad equipment on a large scale and by unusual activity in the building trades, caused in part by the necessity for making up for war time economies and restrictions in both these lines. It was feared that, when the deficiencies which arose from the war time situation were repaired, activity in these industries would slacken and general business be affected unfavourably. To-day, however, it is the opinion that any development along these lines will be more than offset by improvement in other directions. Furthermore, it should be remembered that the population of the United States is increasing substantially each year, not only through excess of births over deaths, but through immigration, which, in spite of Quota Laws, still reaches a comparatively high total. Taking into consideration the immigrants who get into the United States without passing the authorities, it is possible that the annual increase in the population of that country is not far from two millions. It is obvious that the consumption of goods of all classes must be steadily increasing, a factor conducive to prosperity. We can conclude that, from most points of view, business prospects in the United States are extremely good.

GREAT BRITAIN.

In spite of an increase in unemployment in the third quarter of the year, after an improvement in this respect from January to June, Great Britain is entering 1925 in a frame of mind decidedly more optimistic than that of twelve months ago. The inauguration of the Dawes Scheme, prospects of greater stability on the Continent of Europe, and the assurance of political stability at home, are favourable features. Moreover, as fluctuations in European exchanges have tended to become more restrained, the price cutting which rapid currency depreciation gave rise to has largely disappeared, and instances of English firms failing to secure foreign contracts are not so numerous as they were at one time. The much depressed iron and steel and engineering industries are doing better. While pig iron output of 586,400 tons in October shows little improvement over the figure of 569,200 tons in September, when the additional working day in October is taken into consideration, November figures should show a real increase. Output of steel ingots and castings was 678,500 tons in October against 645,000 tons in September. Textile factories are more active. An indication of the improvement in this industry is found in U. S. figures of cotton exports, which show that 1,137,983 bales of cotton were shipped to Great Britain in the period from August 1st to December 5th 1924 compared with 778,788 bales in the same period of the preceding year.

The sharp rise in sterling to $4,71\frac{1}{4}$ on December 9th was aided by various factors. For one thing, rising prices in the United States have probably lessened the disparity between the English and U. S. price levels. The return to power of the Conservative Government with a big majority tended to create greater confidence in English financial policy, and to influence capital, which had left the country early in the year, to return to London, where interest rates are higher than in New York. Moreover, a more optimistic feeling in regard to the prospect for resumption of gold payments by England within a reasonable time has no doubt operated hand-in-hand with the attraction of higher interest rates to induce speculative purchases of sterling.

World's Agriculture.

Cereal Crop Results.

Rome, 31st December, 1924.—A fairly complete survey of the world's cereal harvests for the current season is now attainable owing to the receipt at the International Institute of Agriculture of data of yields practically in all countries of the Northern Hemisphere (Russia and China excepted) and of forecasts of the wheat crops in Argentina and Australia, communicated to the Institute by those Governments.

In fact these data of ascertained yields deal with countries representing about 97% of the world's wheat crop (outside of Russia and China), practically all the rye, 90% of the oats, 85% of the maize, and 80% of the barley crops.

The percentages of production this season as compared with the preceding one are as follows :—

Wheat	89.1
Rye	80.6
Barley	88.1
Oats	98.2
Maize	83.7

The production of every cereal this year is therefore below last season's figures in a considerable degree, with the sole exception of oats. It should be mentioned that the cereal yields of 1923 were unusually plentiful; if, on the other hand, the current year's figures are compared with the average of the five years from 1918 to 1922, apart from the 1923 data, the subjoined percentages result.

Wheat	102.9
Rye	92.4
Barley	98.3
Oats	110.6
Maize	90.7

This year's yield of wheat, and still more that of oats, are therefore larger than the average for the five years from 1918 to 1922, while a decrease is recorded in the case of barley, becoming more decided for rye and maize.

In the December International Crop Report, just published by the Statistical Bureau of the International Institute of Agriculture, the details of area and yield of the various cereal crops are furnished country by country, and summarized by continents, for the current year as compared with the figures of 1923, and with those of earlier seasons. Dealing with wheat only, the most prominent of the data recently to hand at the Institute are indicated below :—

In Rumania a provisional estimate of the wheat yield of 1923 gives 44.6 million centals, as compared with 61.3 millions last year and an average of 46.4 millions during the previous three years.

It may be remarked that there was an increased area sown in 1924, exceeding last year's figures and the previous average by 18% and 33% respectively.

The Rumanian data complete the European figures (Russia excluded). The aggregate of 27 countries in Europe indicates that the yield this year has been 645.3 million centals, against 751.2 millions last year and an average of 631.3 millions in previous seasons.

In the United States the provisional data of yields practically confirm the earlier estimates of the winter wheat crop, and announce an increase in the figures of the spring crop. Aggregating the yields of winter and spring wheat in the United States, the estimate is for 523.6 million centals, against 471.4 millions last year and a five years' average of 528.6 millions. It may be noteworthy that the United States harvest was specially plentiful, being reaped from a cultivated area decidedly less than that of the previous year and even in a greater degree below the average.

The Canadian wheat crop is definitely declared to be exceptionally deficient, so that in North America as a whole the yield has been 686.6 million centals, against 756.0 millions in 1923 and 690.1 millions, the average from 1918 to 1922.

A recent unofficial estimate is transmitted by the Government of Australia, and forecasts a yield of 84.0 million centals against 75.4 millions in the preceding season, and 60.7 millions, the previous average.

Indian Economic Notes.

Electricity in the Punjab.

Electricity in the Punjab is making great headway, as is evident from a perusal of the report of the Electrical Department for the year 1923-24, by Mr. Fred Milne, Electrical Engineer to the Government of the Punjab. Steady progress has been made in the development of public electric supply undertakings, and it is expected that, before long, all the principal towns of the Province will have their own electric supply.

The Rawalpindi Electric Supply Company, of which the enterprising firm of Messrs. Jamasji and Sons are the managing agents, is hurrying up with the construction of the power-house building. Orders for the whole of the plant have been placed, and the residents have been asked to get the necessary fittings. It is expected that the electric supply to the town and the cantonment of Rawalpindi will be available shortly.

The Lahore Electric Supply Company have recently extended their system, although this extension does not fully meet the needs of the town. They have ordered new plant and other accessories and intend to erect a second power-house.

In Amritsar, a second 250-kilowatt steam set has been added and the power-station should be in working order by about the middle of the summer. In order to meet the requirements of the town for the next five years, the Punjab Government has been approached for financial assistance.

In Jullundar, construction work on a power-house is shortly to be undertaken and the necessary machinery has been ordered.

In Multan, Gujranwalla and Hissar, schemes for electric supply are being worked out, while in Lyallpur a scheme is being put into operation to supply electric current to the Agricultural College and Workshops, which will probably include other Government buildings.

The preparation of the Mandi hydro-electric project is completed and is now being scrutinized by consulting engineers in England. The Punjab Paper Mills Company proposes to instal, near Tajewalla, on the Western Jumna Canal, a 6,600-kilowatt hydro-electric plant for working their mill. It is intended to boil all the grass for the mill with steam-raised electricity.

Work on the Renala hydro-electric scheme progressed steadily through the year, and construction work is well in hand.

The Electrical Engineer gave material assistance to the Department of Industries in connection with the construction of a power-house at Shahdara. The overhead mains are being erected and the power-house building is almost completed.—

Foreign Capital for India.

An interesting questionnaire has been issued by the External Capital Committee, which was appointed as a result of the discussion in the Assembly last June, arising out of consideration of the Steel Industry Protection Bill. The committee consists of Sir Basil Blackett (chairman), Sir Charles Innes, Mr. J. W. A. Bell, Mr. G. A. Natesan, Dr. Dwarkanath Mitter, Mr. W. S. J. Wilson, Sir P. S. Sivaswamy Iyer, Pundit Madan Mohan Malaviya and Mr. Vithalbhai Javerbhai Patel. The questionnaire runs: What are the different forms in which external capital enters India? In which of these cases is entry either unobjectionable or necessary in the interests of India generally and of Indian industries in particular? Is it necessary to encourage the entry of any particular variety of capital? If so, what steps should be taken in this direction and to what extent is capital likely to be forthcoming as the result of such steps? How far is it possible to replace external by internal capital? What measures are necessary for the greater attractions of indigenous capital for industrial purposes and the development of banking organizations and credit facilities in India? What are the forms of external capital, the entry of which is objectionable? What are the objections in each such case? What restrictions can and should be imposed in each such case? What would be the effect of any such restriction on (1) the industries and development of the country generally, (2) the loan policy of the Government and local bodies, and (3) holders of investments?

Is it necessary to differentiate in any respect and, if so, how would you differentiate between (1) British and foreign capital and (2) capital from foreign countries which exercise such discrimination and from those which do not? What is the practice in other countries (especially in the British Dominions) in the matter of encouraging or restricting the flow of foreign capital?

INDIAN COTTON MILL PRODUCTION.

Particulars compiled by the Department of Statistics, India, from accounts rendered by millowners, show that the total quantity of yarn spun in Indian cotton mills during the month of September, 1924, amounted to 57 million lbs., and that of woven goods to about 39 million lbs. as compared with 56 million and 38 million lbs., respectively, in the corresponding period of the preceding year.

The production of coarse yarn (Nos. 1 to 25) in September was 50 million lbs., of medium counts (Nos. 26 to 40) 7 million lbs., and of fine counts (above No. 40) 512,000 lbs., as against imports from foreign countries of 1,110,000 lbs. of coarse, 3,168,000 lbs. of medium, and 665,000 lbs. of fine counts.

The production of Indian weaving mills during September, and six months ended September, consisted chiefly of the description of goods stated below (in thousands of yards):—

	September.	April to September.
Grey and bleached piece-goods :—		
Shirtings and longcloth	38,212	255,182
T-Cloths, domestics and sheetings ..	6,868	35,847
Dhoties	38,532	227,859
Chadars	6,079	28,926
Coloured piece-goods	56,428	289,723

The following statement compares the production (in thousands of yards) of piece-goods woven in Indian mills during the month with the imports of such goods from foreign countries:—

	Production.	Imports.
Grey and bleached piece-goods ..	109,042	116,522
Coloured piece-goods	56,428	39,030

The value of goods woven in Indian mills in September, as far as reported, was Rs. 5,14,00,000, in which the share of the Bombay cotton mills was Rs. 4,11,75,000.

The value of cotton goods imported from foreign countries during the month was Rs. 6,66,00,000.

The exports of Indian yarn to foreign countries during the six months, April to September, 1924, were 16,900,000 lbs. as compared with 21,000,000 lbs. and 33,327,000 lbs. in the coresponding periods of 1922-23 and 1921-22, respectively.

The excise duty realized on woven goods during the month of August amounted to Rs. 21 lakhs.

WELFARE WORK IN INDIAN COTTON MILLS.

A large volume of welfare work continues to be done in factories in the Bombay Presidency. The activities of the larger firms in Bombay Island and Ahmedabad in this direction are well known and they do not appear to have slackened their ameliorative efforts during the present slump. The volume of welfare work carried on in the Sholapur mills is, however, not so well known, and deserves mention. All the mills at this place maintain créches, a grain allowance is given, whilst schools are maintained for the half-timers. It appears certain that the percentage of literacy amongst mill children in Sholapur is the highest of the main centres of the industry in the Presidency. The Sholapur Spinning and Weaving Mills—the oldest established in Sholapur—sets a standard which the others are keen to follow. The activities of this mill cover practically the whole range of welfare work. A full-time welfare officer is employed in addition to a full-time doctor. A well-equipped hospital is maintained and the medical activities may be gauged by the fact that over 50,000 out-door patients were treated in 1923 whilst nearly 500 operations were performed. Nearly 80 per cent of the children attend school, troops of boy scouts under a scoutmaster are 80 strong, whilst a restaurant and a reading room have been provided for the employees who also receive the benefit of loan funds, employees' stores, a provident fund and a gratuity fund. The latest type of housing provided is a model of cleanliness. The mill spends nearly a lakh of rupees per annum on all their various forms of welfare activities, and the success of the efforts is primarily due to the direct personal interest taken by the Agent and his officers.

INDIA'S COMMERCIAL PROGRESS.

Sir Charles McLeod, chairman for some years past of the East India section of the

London Chamber of Commerce, was the guest of honour at the first of a series of trade luncheons given by the Old Colony Club, Aldwych House, London, last month. Sir Charles gave some striking facts and figures regarding the commercial and economic progress of India since he first went out to Calcutta in 1877. At that time there were on the Hugli at Calcutta "four miserable wharves"; now there are great docks giving accommodation for many scores of ocean-going steamers at a time. There has been similar progress at Bombay, Karachi, Rangoon, and Madras. This growth of the ports is reflected in the advance of the overseas trade of the country and in the development of great industries, as well as in the agricultural productivity of the country due to irrigation and to the means of transit provided by the railways. In the present century the number of cotton mills has increased from 125 to 263, and the number of jute mills from 26 to 76. In many industrial developments, he went on to say, Indians are holding their own with Europeans. In only one notable direction, that of banking on modern lines, have they proved unsuccessful.

Maternity Benefits Bill.

Mr. N. M. Joshi's Bill to make provision for the payment of maternity benefit in certain industries seeks to carry out some of the proposals contained in the draft convention passed at the first International Labour Conference held at Washington in 1919. It proposes: To prohibit the employment of women in industries; the work in which is regulated by law, for six weeks after confinement; to enable them to leave work six weeks before confinement; to prevent them from being dismissed from service during these periods; to provide for the payment to a woman-worker of financial help sufficient to maintain her and the child in a healthy condition, the money to be raised by the Local Government by levying contributions on the industries covered by the Bill, in the form of a small cess on the products of such industries or in some other convenient form. A fund will be established, called the Maternity Benefit Fund, out of which payments will be made. The Bill is before the Legislative Assembly.

The Indian Bobbin Company.

A new company known as the Indian Bobbin Company, Limited, has been recently incorporated in the United Provinces with the object of acquiring from the Local Government, as a going concern, the Government Saw Mill and Turnery, situated at Clutterbuckganj, in the Bareilly District. The business acquired includes a guarantee for the supply of timber for the manufacture of bobbins, picking-sticks, handles and other turnery from the Government forests of the United Provinces. On a site measuring about 132 acres are erected the offices and mill buildings, consisting of spacious timber godowns, an electrically-driven gantry, saw-mill complete with power plant, ample seasoning kilns, cooling stores, sawn timber godown, bobbin mill, rabbeth and weft mill and other office accommodation. The saw-mill has ample machinery for the requirements of the bobbin mill, in which additional machinery to the value of about Rs. 3 lakhs, recently ordered from England, is now being erected. Under the management of an expert English manager, the outturn capacity of the company's plant, inclusive of the machinery now being installed, is estimated to be worth approximately Rs. 11,00,000 per annum.

Fortnightly Payment of Wages.

H. E. The Governor of Bombay recently asked the Bombay Millowners' Association to ascertain the views of mill operatives whether they desired fortnightly payment of wages or if they would prefer the continuance of the present system of monthly payments. The replies received from practically all mills in Bombay go to show that the mill operatives prefer the present system of monthly payment, firstly, because it is customary in Bombay to make payments of rents and food grains monthly; secondly, it would adversely affect the small wage-earner, who would not be able to withstand the temptation to fritter away the first half of his petty earnings received in the middle of the month and might be obliged to run into debt; thirdly, there would be greater percentage of absence throughout the month owing to the habit of taking one or two days off immediately after pay day; fourthly, dislocation of the

work prevalent on pay days would occur twice a month, and would cause a correspondingly greater loss in the earnings of piece workers. In the circumstances, the Millowners' Association states that it is difficult to introduce the system of fortnightly payments and has informed the Governor accordingly.

Indian Railways.

Interesting particulars regarding India's railways were given recently by the Viceroy in his speech to the Railway Conference. We learn therefrom that nearly 600 millions of passengers were carried last year on the 38,000 miles now open. Our contemporary of the *Madras Mail* compares this with the figures for the United States of America, where railway development is very far advanced. With a railway mileage of 262,544, American railways carried, in 1921, 1,061 millions of passengers; in other words, India, with less than one-seventh the railway mileage of the United States, carried in 1923, more than half as many passengers. The war greatly handicapped railway development in India, more seriously probably than in any other country, but the prospects for future development are bright, as His Excellency announced that projects for nearly 1,000 miles of new lines have been sanctioned and that little difficulty in finding the money is anticipated.

Sericulture in Burma.

The Report on the Operations of the Department of Agriculture, Burma, for the year ended the 30th June, 1924, states :— During the year the demand for disease-free seed from the silk growers of Paukkoung Township of Prome far exceeded the supply available. Altogether 5,200 layings of examined eggs were supplied to rearers in that locality. The demand, however, is about 3,000 layings per month and this is more than the central nursery at Maymyo can cope with. As a result, proposals to establish a small local nursery near Paukkoung have been considered and will shortly be submitted for the approval of Government. During the year the number of rearers has risen to 116 with 80 acres under mulberry. In other localities a beginning has also been made with the extension of this industry. Some mulberry was put down at the Pyinmana Agricultural School, and at Mainlon near Leiktho and rearing commenced with eggs supplied form Maymyo. A beginning has also been made by the American Baptist Mission at Tavoy with a view to finding out the conditions under which mulberry can be grown. Experiments are being tried on experimental farms at Yawnghwe, Hmawbi and Akyab, and further experiments will be made at Pyinmana, Malmein and Myaungmya when the farms of these places have been opened.

Encouragement of Cotton Research.

The Indian Central Cotton Committee will award in February next six to eight Research Studentships of Rs. 150 *per mensem* tenable for two years from April, 1925. These will probably be allotted as follows :—

1. Cotton Breeding.
2. Cotton Physiology.
3. Cotton Technology (Textile Physics).
4. Cotton Entomology.

The qualification required is an honours degree of an Indian University, or the equivalent, in the special subject offered. Application forms and full particulars have been supplied to all Directors of Agriculture and to the Registrars of Indian Universities and may be obtained from the Secretary, Indian Central Cotton Committee, 25, Wodehouse Road, Fort, Bombay. Forms of application will only be supplied to applicants who are *prima facie* qualified.

Indian Sugar Production.

There were twenty-three factories making sugar direct from cane worked in India during the season 1923-24, as compared with nineteen in the season 1922-23 and eighteen in 1921-22. Eleven of these factories are situated in the province of Bihar and Orissa, eight in the United Provinces of Agra and Oudh, two in Madras and one each in Assam and Bombay. Enquiries were instituted by the Sugar Bureau to ascertain the output of these factories and only one factory, in Bihar, failed to respond. There was an increase of 5,338,662 maunds in the quantity of cane crushed and of 393,440 maunds in the amount of sugar produced by factories in India during the season 1923-24, as compared with 1922-23. This increase in all

the provinces was due mainly to the fact that factories could obtain more cane for milling purposes. The area under sugarcane in India was 169,800 acres greater than in the previous season. If we take the all-India figures we find that 13.39 maunds of sugarcane were required in the season 1923-24 to produce one maund of sugar as compared with 13.28 maunds required in the previous season. This was due to the fact that some of the factories in the United Provinces were so overwhelmed with cane that they had to put it through the mills much faster than usual in order to take off this crop.

During the season 1923-24, India's production of molasses by modern factories making sugar direct from cane totalled 622,472 maunds as against 348,024 maunds in the previous season. The increased production should naturally result in a reduction to that extent of the imports of foreign molasses into India unless consumption shows an increase in this country. Statistics regarding the production of refined sugar by modern refineries in India are being collected and will be published in due course.

Education: A New Method.

One of the most recent and the novel methods of educating the public and the masses of Sind is being introduced by Dr. K. B. Patel of Karachi. It has been recognized all over the world that education by visualization—that is, education by means of slides and cinemas—is the most impressive and forcible method of imparting any instruction. The Educational Pictures Corporation of this city have imported a large quantity of educational films of various subjects, and some of them have been shown already during the last Health Week, and under the auspices of the Karachi Health Association, and now are being shown in the city under the auspices of the local Arya Samaj. The people who would otherwise turn away from schools and books, stand still and see with rapt attention what is being exhibited on the screen. Dr. Patel has shown recently such films as Working of the Human Heart, How we Breathe, Jiu Jitsu, Wrestling, Malaria, Life in a Drop of Water, Nursing the Baby, etc. Large crowds of people, including many Indian ladies, have been taking advantage of these useful series of lectures now being given by Dr. K. B. Patel who expects to hold some more of these illustrated lectures in the various quarters of the city.

Artificial Silk in India.

A recent development which will interest Lancashire, when it becomes known, is the establishment by Courtaulds of a mill in the Bombay Presidency to produce artificial silk, an enterprise which has already been fully commented upon in these columns. This pioneer firm has been exporting considerable quantities of viscose yarns to India, but hope to satisfy the local mills and handloom weavers by yarn produced in Bombay. Lancashire manufacturers have been making some very fine loin cloths and shawls with artificial silk for effect purposes, and there is little doubt that in future India will use considerable quantities of artificial silk yarns and fabrics.

Natural Cement near Karachi.

A Karachi Parsi gentleman, Dr. Peshoton S. G. Dubash, announces the discovery of a field of septaria, *i.e.*, natural cement within a short distance from the Karachi City area. He thinks the cement exists in large quantities sufficient to be of economic value and urges the formation of a Committee to explore the possibilities with assistance from Government. The announcement has been received with great interest by prominent local scientists.

Cars, trucks and similar vehicles are largely used in workshops for the conveyance of half-finished and finished goods. The wheels on such vehicles are composed of wood or iron and entail the drawback that they will occasion more or less noise, so that work in such rooms will often be almost unbearable. This fault can be easily remedied by fitting the iron or wooden wheel with a leather crown. This will consist of small single plates of sole-leather which are pressed under high pressure into the crown on special machines, thus forming a firm and durable, though flexible, tyre. Such wheels will only wear to a slight extent, while they will run noiselessly and save the floor and will not suffer from wet, cold or heat.

Foreign Economic Notes.

Cost of Foodstuffs in Britain.

London, 1st January, 1925.—The British Government has just constituted a Royal Commission to inquire into the cost of foodstuffs and there are other countries in which the same problem looms very largely in the public mind. The British inquiry is confined expressly to considering foodstuff prices only, although there is no doubt that these prices are governed to some extent by the cost of many other commodities and services. It has become quite usual to assume that high prices, especially where foodstuffs are concerned, are simply the result of undue profit-making on the part of those who handle the goods, and to assert that there are far too many middlemen engaged in business. We believe that the British inquiry will help to rectify this misconception and we are equally sure that a similar inquiry in almost any other country would have the same result. There are certain basic considerations, peculiar to our own time, which, although they have been dealt with often enough, seem sometimes to be forgotten.

Between 1914 and 1919 many countries devoted a tremendous amount of effort to purely destructive purposes, and the ground then lost has not yet been made up. In many respects world production is below world demand, with the inexorable result that prices remain high. To put the matter in the broadest possible terms, the remedy for high prices lies in greater and cheaper production. In other words, a great deal of work is necessary if the destructive effects of the war are to be overcome. There is a tendency at the present time towards a restriction of production coupled with ever-increasing wage demands, and this policy cannot fail in the long run to react upon the heads of its initiators. Maximum production is absolutely essential if prices are to be reduced and the onus of attaining it falls equally upon all classes engaged in industry. Moreover, industry must be left free from Government interference to carry out its own salvation. Any idea that prices can be reduced by the commencement of State trading operations on a large scale has been proved entirely fallacious within the last few years. The real need is for the State to make sure that excessive profits are not made by those through whose hands goods pass, provided always that legitimate competition is not interfered with. In industry it is necessary for each individual to produce to his full capacity, whatever position he may occupy. If such effort is supported by installation, wherever and wherever possible, of improved methods of production, the problem of high prices will eventually be solved.

Fixing Easter.

Among the various committees appointed by the League of Nations is one which is studying calendar reform and the question of a fixed date for Easter. While business interests will probably agree that the calendar in general works well enough, it would certainly seem as though the fixing of a date for Easter were desirable. Chambers of Commerce and other business bodies have advocated this reform at various times for many years past, and definite resolutions on the subject have been passed by the London Chamber and, more recently, at the congress of the International Chamber at Rome in March, 1923. The committee of the League of Nations referred to above, in co-operation with the International Chamber, is now canvassing business opinion in various countries upon the subject, and, from reports which have reached us, there appears to be general agreement that the fixing of the date for Easter is desirable in the interests of all sections of the community. The present position is certainly anomalous, for all other festivals and holidays, whether religious or not in their significance, occur at certain stated times of the year, whereas Easter, which has really come to mark quite a strong dividing line in the year's activities, may occur at any time within some six weeks. Reform on these lines will, of course, have to be adopted internationally if it is to be effective. The question is entirely different from that of "summer time", the incidence of which in

England and France relieves the traveller to Central Europe from the necessity of altering his watch during six months of the year. The case is, therefore, one in which the League and the International Chamber will not have completed their work when they have a sufficiently large body of opinion in favour of the proposed reform. Legislation will probably be necessary in each individual country and steps will have to be taken towards getting this carried through. It cannot be too often pointed out that the work of these bodies in improving and facilitating international trade is being seriously hampered because the Governments of some countries are very slow in ratifying the measures which their own authorized delegates have approved. At the last meeting of the council of the International Chamber it was decided to urge the various national committees to obtain from their respective Governments, where necessary, ratification of the League of Nations' arbitration protocol and of the conventions for the simplification of customs formalities and regarding railways and ports. The fact that such ratifications are still outstanding reflects no credit upon the Governments concerned and it is to be hoped that the council will be able to contemplate a better and more uniform state of affairs at its next meeting.

The Future of Wembley.

After a lengthy period of uncertainty, it has now been definitely stated that the British Empire Exhibition will be re-opened at Wembley Park next year. This announcement is of importance, not only to the British Empire, but to Europe also. It is certain that a large number of the visitors to Wembley from the British Dominions and the United States did not return home before having spent some time in other European countries and it is equally certain that many who did not have the opportunity of visiting the Exhibition in 1924 will do so in 1925. The second season, in fact, may well prove a greater success than the first, for weaknesses can be rectified in the light of experience and it is reasonable to hope that the weather next summer will not be so consistently adverse as has been the case during the past season. Without referring to statistics, it is safe to assume that at least half the days of opening were days of rain.

A New Aluminium Alloy.

The discovery of a new aluminium alloy by a Swiss scientist is likely to play an important part in the manufacture of motor cars in the future. Striking results have occurred from extensive tests made by the Department of Physics of the University of Zurich. Although the alloy only weighs 10 per cent more than pure aluminium, which, in itself, is approximately only one-third the weight of cast-iron, it is shown to possess the strength of all but the very highest grades of steel. The metal is stated to machine cleanly and fast and to be perfectly uniform in texture. It can also be recast without loss in tensile strength, and shrinking has been eliminated. "All-metal" (the name it has been given) castings ring and have a uniform grain like tool steel, with an yield point of approximately 80 per cent, as against 23 per cent to 40 per cent of other metals. It is stated that the cost does not greatly exceed that of aluminium.

The development of Switzerland's water power for electrical purposes has been an important factor in promoting the growth of electrical manufacture in that country. Its recent progress, and in particular its application to railway traction, has helped to tide the electro-technical industry over a very difficult period. Upon its further progress high hopes are based.

Switzerland's foreign trade balance is heavily influenced by her need to purchase large quantities of coal from abroad. For a long while she has been effecting a gradually increasing saving through the growth of the supply of current from hydro-electric power stations. Every year, every month almost, the snow-clad peaks, the mountain torrents, the rushing streams, the steadily flowing rivers are being turned to greater practical use in furnishing "white coal" for railways, factories, and farms. Not only does the country thus benefit by the money saved on her foreign coal bill but also by the added efficiency, cleanliness, and adaptability that result from electrical operation. The ever-extending network of high tension lines

which one sees when travelling through Switzerland may be taken as a clear sign of future prosperity, enhanced competitive capacity, and, be it added, advancing purchasing power.

A Model Power Station.

The Eglisau hydro-electric installation is an outstanding example of Swiss efficiency in power station work. It is situated on the Rhine at a point where the stream can suitably be harnessed and directed through seven vertical-shaft water turbines. Each of these drives a three-phase Oerlikon alternator of 5150-5500 kv.a., the combined installation being capable of producing an estimated total output of 170,000,000 kw. hours.

An impressive feature of the control room of this 42,000 h.p. station, which is distributing current at 8,000 and 48,000 volts, is the perfect quiet that prevails. The power house itself is 330ft. long, 50ft. in width, and 75ft. high. It is thus lofty enough to allow any one of the complete sets to be hauled up completely clear of the floor. For this purpose a travelling crane close under the roof can traverse the whole length of the building. Looking down on this hall from the control room, isolated from the hum of the generators and turbines, there is an air of tranquillity and orderliness that scarcely suggests a busy central station.

The power produced is supplied to the neighbouring cantons of Zurich and Schaffhausen and the former Grand Duchy of Baden. The station is owned by a limited company, the entire share capital of which has been subscribed by the Governments or the State-owned electricity works of a number of neighbouring cantons. There are no private shareholders. Five years were occupied in the construction of the works, at a total expenditure of 40,000,000 francs. So perfect are the controlling devices which form part of the equipment of this station that a staff of only seven men is needed.

At the further end of the weir across the Rhine there is a noteworthy feature. The water flows over suitably graded steps up which the fish may leap when they seek the higher reaches of the river. At the top of the steps the fish enter a quiet pool where metal tabs are affixed to their fins. Thus the fish may be traced at later stages of their progress.

Sugar in England.

Considerable interest has been drawn to the home-grown sugar industry, since a direct subsidy is to be awarded by the Exchequer. Including the present year, for four years the subsidy is to be 19s. 6d. per cwt. of sugar; for the next three years it is fixed at 13s. per cwt., and then for a further three years at 6s. 6d. per cwt. The British Beet Sugar Society calls attention to a misunderstanding which has arisen with regard to a statement made by the Chancellor of the Exchequer, that the excise duty would be re-imposed. From this duty home-grown sugar is at present exempt. In 1922 the Prime Minister of the Coalition Government (Mr. Lloyd George) was responsible for the remission of this duty, and according to his views expressed in the House of Commons, the benefit of the subsidy would be reduced and the new proposals would fail in the objects for which they were designed. The Society says that this is erroneous. At present the customs duty is 11s.8d. and 9s. 9d. per cwt. respectively on all foreign and dominion sugar imported, and will remain at these figures, but with the excise duty re-imposed on home-grown sugar, it will meet dominion sugar imported on equal terms, but still have an advantage of 1s. 11d. over foreign sugar. In addition, it will have the advantage of the subsidy of 19s. 6d. on every cwt. produced, thus giving it a total advantage of 21s. 5d. per cwt., over imported sugars instead of the present 11s. 8d. The Society also calls attention to the fact that the advantage will remain unaffected in the event of any further reduction in sugar duty.

Railway Centenary.

The decision to hold an International Railway Congress in London next year and to link this congress with the Railway Centenary celebrations opens up the prospect of an interesting gathering. The fact that the British railway system is now being operated on the group principle will, it is hoped, provide an opportunity for the presentation to the congress of information as to the views of railway officials regarding the probable effects of group working on costs

of operation as compared with the old competitive system. No definite programme for the congress has yet been arranged, but it has been decided that it shall take place in the last week of June next, and a committee is now engaged in preparing for the congress, which will, it is anticipated, attract a large gathering from all parts of the world. The centenary celebrations will follow the London congress and will be held at Stockton and Darlington, these two towns having been linked by the first public steam railway constructed in Great Britain. Not the least interesting feature of the centenary gatherings will be the railway exhibition at Darlington, the object of which is to show the development of railways through the medium of a comprehensive collection of railway relics.

THE VALUE OF SPECIALIZING.

Whose business is it to decide the career of the children? The *Daily Mail* thinks it is the duty of the parents, pointing out that, immature of judgment, swayed by often conflicting impressions and suggestions, not one youth in a hundred possesses sufficient steadiness and balance to set a course towards a future career through the changing currents of school life.

This is where parents can help. First in advising, not compelling, the future career, and, when once a choice is made, keeping their child on the road towards it, unless and until his or her unsuitability for it becomes obvious.

The rewards of life go to the owner of specialized knowledge; this is only acquired after years of plodding and by "sticking to it". Youth, faced with the prospect of a long period of drudgery, is apt to turn aside unless someone is at hand to encourage and support.

BAD TEETH THE PENALTY OF CIVILIZATION.

"Tooth decay is spreading among civilized people largely as a result of the consumption of mushy foods from which the minerals have been extracted in the process of preparation," Mr. Clement Jeffery is reported, by the *Daily Express*, to have said in a lecture on "Vitamins and Vitality".

"Children," he added, "should be encouraged to exercise their jaws and teeth on hard foods, such as whole meal biscuits and fresh salad vegetables.

"Neuritis, rheumatism, scurvy, and many epidemic diseases formerly believed to be caused by germs, are now known to be the effects of a dietary deprived of mineral salts and vitamins. They are curable by supplying the missing elements.

"Every one can help to conserve the national health by including in their dietary uncooked foods. Green vegetables and ripe fruit offset to some extent the evil effects of a denatured diet."

VALUE OF EDUCATION.

A College education is worth 72,000 dollars, according to Dean Lord, of the Boston University College of Business Administration, and the cash value of a high school education is £33,000.

The Boston institution has been carrying out a careful study of the earning capacity of college graduates, and the report contains a number of interesting facts. According to a New York *Herald Tribune* summary, quoted in the *Literary Digest*, the average maximum income of the untrained man in America is £1,200 a year, that of a high school graduate £2,200, and that of a college graduate £6,000. The total earnings of the three types up to the age of sixty are set at £45,000, £78,000, and £150,000. It is also estimated that while the untrained man at the age of 50 begins to drop towards dependence, the college man reaches his maximum earning capacity at sixty. As the report is quoted further:

The untrained man goes to work as a boy of fourteen and reaches his maximum income at the age of thirty. This maximum is, on the average, less than £1,200 a year. In view of the fact that this income is earned through manual labour dependent on physical strength, it begins to fall off at the age of fifty or even earlier and soon reaches a level below self-support.

The figures show that more than sixty of every 100 untrained workers are dependent on others for support at the age of sixty. Between fourteen and eighteen, the four years which might have been spent in high school, the untrained young man usually earns not more than £2,000.

Books in Brief.

Short Reviews of Recent Books.

Crop Production in India.

By A. R. Howard, C.I.E., M.A., Director of the Institute of Plant Industry, Indore. Published by the Oxford University Press, London. Price 10*sh.* 6*d.*

This is a stimulating book. Mr. Howard's work is so well-known in India that a book from his pen ought to be in itself a recommendation for its wide publicity. We have read the book through and through and can speak of it as about the best book for getting a true insight into the work that has been attempted in recent years by officers of the Imperial and State Agricultural Departments in all India. It is written in a strikingly simple and readable style. A handy, well-written and well-printed book like this ought to go a long way in popularizing the work of the Agricultural investigators in India. To any one who desires to take even an academic interest in matters agricultural in India, we can safely advise this book. It is conveniently divided into three parts, dealing with the soil, the crop, and organization. The second part will be found to be full of useful information from the point of agricultural industrialists. An excellent *vademecum* of agricultural information based on the investigations of scientific observers of supreme value to practical agriculturists and industrialists in India.

The Science of Public Finance.

By G. Findlay Shirras. Published by Messrs. Macmillan & Co., London and Bombay. Price 21*sh.* net.

This is a welcome addition to the Financial Section of our Library. To those acquainted with the work of Mr. Shirras, they know what to expect from a work of this nature from his hands. Mr. Shirras has attempted—successfully in our opinion—a work of supreme magnitude. Bastable has been our guide for many a year now and with this book before us, we think we will have at hand a work of equal authority and greater utility even, because it includes Indian Finance to a larger extent. We think a work like this has been a great desideratum for some time. Mr. Shirras' work, therefore, fills a need which has long been felt in this country. Of Mr. Shirras' capacity to undertake a work of this nature little need be said. He is so well equipped for it that it is difficult to think another equally suitable for it. His work has been done with judicious care and it is fit both for the lay reader and the advanced University students. Its appearance at a time like this has much to commend to it. The financial troubles of many of the countries of the world, since the close of the War, have been so many and so annoying to their peoples that everybody has been thinking of measures of financial reform to set right matters. Mr. Shirras' book, we have no doubt, will prove a contribution to the subject of Finance in general. Its scope will be readily understood when it is stated that it is divided into five "Books" dealing with :—(1) Introduction dealing with scope and method, and the development of modern financial theory ; (2) Public Expenditure ; (3) Public Revenue ; (4) Public Debt and (5) Financial Administration. The Appendices are many and are devoted to the elucidation of principles, through Indian figures, of the topics raised in the several "Books" referred to above. A book of permanent value, which ought to be in every Library and on every publicist's table.

The Challenge of Asia.

By Stanley Rice, Late, I.C.S. Published by Mr. John Murray, London. Price 7*sh.* 6*d.* net.

This is frankly a political work. The "Challenge" of Asia referred to is the "political" challenge. We think Mr. Rice is generally right in his view of Asiatic affairs. The plea he puts in for a more rational understanding of the "Asiatic" menace, as it has been called, is a timely one. Nobody wants, in his view (which seems in the main a correct one), to drive out the European but certainly it is up to the European to treat the Asiatic as a human being

endowed with human feelings. The warning against the colour bar which Mr. Rice utters, whether in America or in South Africa, is an opportune one. It is to be hoped that European nations will ponder the problem from an ethical point of view. Towards that end, a work of the kind under review is certainly a contribution. We wish it circulated well in the American States and the African Union.

Rural Reconstruction.

By H. W. Wolff, Author of "People's Banks," etc. Published by Messrs. Selwyn & Blount, Ltd., 21, York Buildings, Adelphi, London, W. C. 2.

A book by Mr. Wolff is an event of importance to co-operators in India, where his name is respected and revered as that of an old friend and a benefactor. In this short review, we cannot do more than refer to its comprehensive and suggestive character. The problem of rural reconstruction in England is an urgent one and depends for its solution on co-operation between the classes and the abolition of the antiquated feudal system. Mr. Wolff suggests that unless this cardinal idea is grasped, there can be no hope of prosperity in England. He is not for Government control, which is deadening in its effects, but for individual effort. The War has done many things but if it does not make the nations that have been compelled to take part in it give up old-world ideas and seek new remedies for the old diseases, there is no knowing if they will ever get a chance to improve. Mr. Wolff writes in his usual dignified style on a theme of first-rate importance. His present work is not without interest to us in India, where his publications continue to be read with unabated interest.

Stabilization.

By E. M. H. Lloyd. Published by Messrs. George Allen and Unwin, Ltd. Price 4*sh.* 6*d.* net.

Mr. Lloyd, in this volume, seeks to give a wider application to the Geneva Conference plan for stabilizing the general level of prices by international co-operation between the Central Banks. Mr. Lloyd analyses in simple terms the chief causes and consequences of the existing instability of prices and production, and suggests a programme of stabilization which is essentially based on the Geneva Conference plan. He would, in a word, apply the principle of stabilization to particular commodities such as coal, oil, wheat, cotton, rubber and other stable raw materials and foodstuffs. The idea of deliberately regulating prices, whether by producers' co-operation by commercial combination or by State intervention, is shown by him to be increasingly popular in producing countries and to possess a sound theoretical justification. A comprehensive policy of stabilizing prices and production by international co-operation, in the interests of producers and consumers alike, is put forward by him as the best means of combating agricultural and industrial depression and of checking an otherwise inevitable drift towards a further period of high prices and profiteering. Though his theory is confessedly imperfectly worked out, there is a great deal to be said in its favour. The work is a suggestive one and merits attention, especially from the consumer's point of view the world over.

The Purpose of Education.

By St. George Lane Fox Pitt. Published by the Cambridge University Press, Cambridge. Price 4*sh.* net.

This is a new cheap edition, revised and enlarged, of Mr. Pitt's famous classic on education. Mr. Pitt published the first edition of his work in 1913, since when it has been issued three more times, including the present. In this edition, the Appendix which appeared in the last two editions is embodied in the text together with some additions. Mr. Pitt's "examination of educational problems is in the light of recent scientific research" as the subsidiary title puts it. He rightly insists that modern education is faulty in that it has had the effect of "obscuring its ideals and perverting its methods". His whole work is an elucidation of this position. It is too great a theme to detail here; every teacher and educationist should study the work for himself or herself. To the educational administrator, especially in India, a volume like this should prove an investment. We

hasten to add that the "Lettre-Preface" of Professor Emile Boutrouse appears in this edition in the original French and in English translation. A book that should be in every General and Educational Library in India.

India's Forest Wealth.

By E. A. Smythies, B.A., Ph.D., Conservator of Forests, Working Plans Circle, U.P. Published by the Oxford University Press. Price Rs. 2—8—0.

This is a handy little volume in the "India of To-Day" Series issued by Mr. Humphrey Milford. We have recently had occasion to review at length some of the volumes issued in this series. The present addition to it is an eminently desirable one. The forest wealth is immense, much of it yet unexploited. Mr. Smythies has produced in small compass a work full of information and interest. It is up-to-date and accurate, and the twelve illustrations with which it is enriched, add to its value. We have no doubt that it will reach a large circle of readers interested not only in the subjects of forests but also in their exploitation from an industrial point of view. To forest administrators all over India we commend the volume not only for its suggestiveness but also for the amount of useful information it contains.

The Ernakulam College Magazine for January 1925 is the College Golden Jubilee Number. It is excellently got up and is replete with excellent illustrations and interesting matter about the College and its boys, old and new. The Editor deserves to be congratulated on his "Who's Who" which shows the many "old boys" now in positions of trust and responsibility. We note in it some Mysore names. The place of honour in the number is assigned to an article on the "History of Education" by Mr. C. Achyuta Menon, B.A. (an old boy) which is not only appropriate but also well merited. We wish the College and its boys (past and present) every success.

Topics in the Journals.

BULLETIN OF THE IMPERIAL INSTITUTE, VOL. XVII, FOR 1924.—The Investigation of Paper-Making Materials.

2. THE MYSORE ENGINEERING ASSOCIATION BULLETIN FOR JUNE 1924.—Biographical Sketches of Mr. V. Rangaswamy Iyengar, B.C.E.

3. THE BENGAL B. & O. CO-OPERATIVE JOURNAL FOR JANUARY 1925.—Agricultural Co-operation in India, by H. Calvert, I.C.S.

4. THE JOURNAL OF THE MINISTRY OF AGRICULTURE FOR JANUARY 1925.—Advantages of Milk Recording.

Punjab Board of Economic Survey.

The following is a report of the proceedings of a meeting of the Board of Economic Inquiry, Punjab, Rural Section, held in the Financial Commissioner's Room, Lahore, at 11-0 A.M. on Saturday, 13th December 1924:—

Present:

C. M. King, Esq., C.S.I., C.I.E., I.C.S. (*Chairman*).
H. Calvert, Esq., B.Sc., I.C.S.
D. Reynell, Esq., M.A., B.C.L., I.E.S.
Prof. Brij Narain, M.A.
Prof. Amar Nath Bali, M.A.
Lala Shiv Dyal, M.A.
W. H. Myles, Esq., M.A. (*Honorary Secretary*).

Apologies for non-attendance were intimated from Messrs. D. Milne, H. R. Stewart, H. W. Emerson, E. D. Lucas and Lala Mulk Raja Bhalia.

1. The minutes of the previous meeting held on the 22nd October 1924 were taken as read and confirmed.

2. *General Economic Inquiries.*—(*a*) The minutes of a Meeting of the Sub-Committee appointed in connection with the six new inquiries, held on Friday, the 31st October 1924, were read.

(*b*) The Board sanctioned the substitution of Rawalpindi and Lyallpur for Campbellpur and Sargodha Districts, as recommended by the Sub-Committee.

(*c*) The Honorary Secretary reported that Messrs. King, Calvert, Emerson, Stow, Roberts and Brij Narain had kindly agreed to act as Members-in-Charge for Amritsar, Jullundur, Multan, Rawalpindi, Lyallpur and Rohtak Districts, respectively.

The Board, without desiring to limit in any way the Member-in-Charge, considered that the following recommendations might prove useful:—

(*i*) The Member-in-Charge should make himself responsible for the selection of a suitable village as specified in (*d*) below.

(*ii*) He should interview the candidate selected by the Board and explain to him what he wants to be done.

(*iii*) He should receive from the investigator fortnightly reports of the work being done. These to begin with may require considerable criticism and insistence on the point that the object of the Board is to ascertrin facts and not the unsubstantiated opinions of individuals.

(*d*) The Board approved of the following types of villages being selected in the different districts :—

(*i*) Multan: the village should be canal irrigated (inundation);

(*ii*) Rohtak: the village should be canal irrigated;

(*iii*) Jullundur: the village should be well irrigated;

(*iv*) Amritsar: the village should be canal irrigated;

(*v*) Rawalpindi: the village should be well removed from the Cantonments;

(*vi*) Lyallpur: the village should be a canal irrigated colony village held by peasant grantees.

(*e*) The Board sanctioned the Honorary Secretary to communicate with Members-in-Charge and request them to select the village for inquiry in each District, if possible, before the 1st January 1925.

(*f*) The Honorary Secretary reported that seventy applications have been received for the posts of investigators and that 31 candidates have been asked to appear for interview on the 15th December 1924.

(*g*) The Honorary Secretary reported that the Meeting of the Sub-Committee to interview the candidates had been unavoidably postponed till after this (December) Meeting of the Rural Section. The suggestion that the Chairman of the Section should be present at the interview was approved.

(*h*) The Board sanctioned the six inquiries being started on the 1st January 1925.

(*i*) The Board authorized the Sub-Committee to select candidates and have the inquiries set agoing on the abovementioned date.

3. The Honorary Secretary read paragraph (3) of the proceedings of the Meeting of the Joint Board held on the 7th November 1924 to show that the Joint Board had asked for a grant of Rs. 25,000 for the Rural Section.

4. *Kangra Inquiry.*—(*a*) Mr. Calvert reported that he had seen Mr. Mul Raj, Investigator, recently and that he expected the report to be ready shortly.

(*b*) The salary of the Patwari attached to Mr Mul Raj was sanctioned till 12th December 1924.

5. *Ferozepur Inquiry.*—The Honorary Secretary stated that he had received the Report of this Investigation from Mr. Calvert three days before the Meeting of the Section. It was agreed that the Board should meet on the 3rd January 1925 to discuss this Report which would be circulated to members.

6. *Muzaffargarh Inquiry.*—The Chairman undertook to write to Mr. Anderson and ask how this inquiry was proceeding.

7. *Thesis on the Milk Supply of Lahore.*—The Honorary Secretary reported that 250 copies of the Thesis on the Milk Supply of Lahore had been received from the Government Printing Press. Copies had been sent to members. It was agreed that the Report should be circulated to those on the distribution list.

8. *General Questionnaire for Economic Inquiries.*—The Honorary Secretary was given permission to circulate the Questionnaire to those on the distribution list.

[At this point the Chairman had to leave the Meeting and Mr. Calvert took the Chair.]

9. *Economic Value of Goats in the Punjab.*—At the last Meeting of the Rural Section this matter was postponed to allow Mr. Stewart discussing it with Mr. Brayne. Mr. Stewart wrote to say that he would be seeing Mr. Brayne on the 17th instant. Further discussion was, therefore, held over till the next Meeting.

10. *Size and Distribution of Holdings in the Punjab.*—The amended copy of this Report as circulated to members was taken up for consideration. After some discussion the Honorary Secretary was authorized to make the necessary arrangements for the printing of this Report. Mr. Calvert intimated that he would hand over the material from which the Report had been compiled to the Honorary Secretary for record purposes.

11. *Economic Congress in the Punjab.*—The Honorary Secretary pointed out that the Joint Board had expressed itself in favour of holding an Economic Conference in 1925-26, and, further pointed out that as so little had been done by the Urban Section, the Rural Section would have to play the principal part. After some discussion it was agreed to ask the Joint Board to postpone this proposal until further progress had been made with research and investigation.

12. *The Prize Thesis.*—The draft rules drawn up by the Honorary Secretary for conduct of this contest were approved with a few modifications. The Rules as amended are circulated herewith.

It was agreed that intimation should appear once a month as an advertisement in the *Civil and Military Gazette* and the *Tribune*, and that copies of the same should be sent to Colleges so that notice might be drawn to it in their Journals.

The Honorary Secretary was also asked to draft a paragraph for insertion in the *Indian Journal of Economics* and the *Indian Agricultural Journal*.

13. It was agreed that as Mr. Stow had agreed to act as Member-in-Charge of the Rawalpindi Inquiry he should be co-opted as a Member of the Rural Section of the Board.

C. M. KING,
Chairman.
17*th December* 1924.

W. H. MYLES,
Honorary Secretary.
16*th December* 1924.

The Mysore Economic Journal

A Monthly Periodical devoted to the Discussion
of all Economic Topics of Interest

Vol. XI MARCH 1925 No. 3

The Indian Budget, 1925-26.

It was a surplus budget which Sir Basil Blackett presented to the Legislative Assembly a few days back and Mr. McWatters to the Council of State. The Finance Member first referred to certain improvements in financial machinery as result of separation of the Railway Finance and commercialization of accounts of the Post and Telegraph Department. The latter showed a net loss in the department of three lakhs, and one lakh in current and next year respectively. The final accounts of 1923-24 showed a surplus of 239 lakhs against the revised estimate of 206 lakhs, the chief variation was a net saving of three and half crores over the Military expenditure which has been mainly utilized by making changes in accounting with great advantage to the financial position in future. He paid a special tribute of thanks to the Commander-in-Chief's unfailing co-operation and assistance in the task of reducing the Army expenditure. The year 1924-25 showed that receipts from taxes on Income, Salt and Opium were less than what was anticipated while, excluding Railways, they saved over Exchange 215 lakhs. The average rate of the current year was expected to be 17½d. instead of 16¾d. which he took last year and for which he was accused by some of rashness. The most important of all the total net Military expenditure was 392 lakhs less ; the net result of all variation was surplus of four crores during the current year instead of eighteen lakhs. He next touched upon the question of public debt and looked forward to the time when Railway debt and the Provincial debt would be raised on specific security of Railways or of Provincial Loans Fund and not on general credit of Indian revenue. Turning to the budget for 1925-26, he first dealt with the question of Exchange and without any intention of prophesying he proposed to take Exchange at 18d., as for nearly half year the Exchange has been fairly steady in the neighbourhood of 18d. Here he answered the critics of Exchange Policy and repudiated the suggestion that the Goverment was trying to damage the Indian trade. Resuming Budget, he estimated the Military expenditure at 56½ crores net for 1925-26 which, excluding certain abnormal items, really amounted to fifty-five crores. Despite progressive reduction since 1920-21, he looked forward confidently to further important reduction in the army estimates in 1926-27. The Finance Member felt particular satisfaction in being able to provide for additional sums for beneficial services, such as Research Institutes. Sir Basil Blackett next referred to the proposed minor Tariff changes whose financial effect would be negligible. Among others duty on Motor spirit would be reduced to four annas a gallon, Import duty on grain and pulse would be abolished and duty on reeds, healds and other articles used in power-looms reduced to 2½ per cent. He estimated a Revenue of 133 crores 68 lakhs and Expenditure of 130 crores 44 lakhs, leaving a surplus of three crores twenty-four lakhs in 1925-26. After analysing this surplus, he thought that two crores and sixty-eight lakhs of it would be regarded as recurrent surplus of which he would give up two and half crores in reducing Provincial contributions according to Devolution Rules whereby Madras would get remission of 126 lakhs, United Provinces 56 lakhs, the Punjab 61 lakhs, and Burma 7 lakhs. (Applause.) The surplus did not include 63 lakhs for Bengal, which, after a careful study of

the case, has been remitted, for a further period of three years. He promised to seek the approval of the Assembly to these proposals and informed of a resolution to be moved after the passing of the Finance Bill. Referring to the suggestion for reducing Postal Rates, he laid down definitely that so long as Provincial contributions were outstanding, surplus could not be used for reduction in Central Taxation, nor in Postal Rates, unless the latter could be done out of the surplus of the Postal Department itself. The Postal Department should not be subsidized at the expense of the tax-payers. The Ways and Means position, he said, was very satisfactory and the maximum loan Government would raise in 1925-26 would be twelve crores of rupees in India. There would be no external loan.

Concluding, the Finance Member paid glowing tribute to the labours of the first Assembly, Sir Malcolm Hailey and the Retrenchment Committee who had made their task easier by substantial taxation and retrenchment so that they were now taking substantial step in an eventual extinction of provincial contribution, thereby giving new hopes to those working the reformed constitution in provinces and fresh encouragement in their task of building up a new India. Though the position was brighter one, they could not be blind to the vastness of the task ahead in wiping off the Provincial contribution and then reducing the level of Central Taxation. "We have ground for sober satisfaction. We have none for premature elation or for any slackening in our endeavour, I can offer India no better motto to-day than my own old family device, *nous travaillerons en esperance*', We will work in hope."

The Budget in Brief.

SALIENT FEATURES,

Revenue Budget.

	1923-24. (Actuals.) crores.	1925-26. (Budget.) crores.
Revenue	133.17	133.68
Expenditure	130.78	130.44
Surplus	2.39	3.24

Debt.

	31st March 1924. crores.	31st March 1925. crores.
Productive	673.59	725.15
Unproductive	295.24	288.56
Total ..	968.83	1,013.71

Reduction of Provincial Contributions.

Madras.....By 126 lakhs, from 348 to 222 lakhs.

Bengal.. 63 lakhs remitted for another 3 years.

United Provinces..By 56 lakhs from 240 to 184 lakhs.

The Punjab..By 61 lakhs from 175 to 114 lakhs.

Burma.. By 7 lakhs from 64 to 57 lakhs.

Borrowing.

There will be no borrowing in England but 12 crores will be borrowed in India.

Taxation.

No important variations of taxation, only a few minor changes. Reduction of duty on motor spirits to 4 annas a gallon, abolition of import duty on grain and pulse; reduction to 2½ per cent of duty on reeds, healds and other articles used in power-looms.

The Finance Bill.

The following is the statement of object and reasons of the Finance Bill introduced by Sir Basil Blackett. The object of this Bill is to continue certain provisions of the Indian Finance Act, 1924, which would otherwise cease to have effect from 1st April 1925 and to give effect to certain minor amendments in the Traiff. Clauses 2, 4 and 7 provide for the continuance of rates of salt duty, postage, income-tax and super-tax prescribed by the Indian Finance Act 1924, while clause 6 provides for the credit to revenue for a further period of one year; *i.e.*, till the 31st March 1926, of interest on securities forming part of the paper currency reserve. Clauses 3 and 5 give effect to certain minor amendments which it is proposed to make in the tariff. The changes are not important from the revenue point of view and are as follows: (1) The 2½ per cent import duty on grain and

pulse is removed in accordance with the recommendations of the Fiscal Commission. The import of these articles is negligible in normal times and the duty is suspended in times of scarcity. (2) At present motor spirit produced in India is subject to an excise of 6 annas a gallon and imported motor spirit to a duty of 8½ annas a gallon. Imports are extremely small and in order to cheapen the motor spirit it is proposed to reduce the excise duty to 4 annas a gallon on petrol produced in the country and to levy merely a customs duty on imported motor spirit at the same rate, *viz.*, 4 annas a gallon. (3) Certain articles such as healds, reeds, shuttles, etc., can be used as component parts either of power-looms or hand-looms and are, therefore, assessable to duty under the higher rate *i.e.*, as component parts of hand-looms. Their chief use, however, is in power-looms. It is proposed to amend the schedule so as to make it clear that the duty to be levied on these articles is the same as that on other component parts of power machinery, namely, 2½ per cent.

Artificial Fertilizers.

The ever-increasing demands on the part of a large number of European countries for artificial fertilizers should cause particular attention to be paid to an editorial on the possibilities of sulphur in this connection appearing in the current issue of "The Chemical Age". Although the whole matter must still be considered as in a more or less experimental stage, says our contemporary, there is a good deal of interest attached to the unobtrusive work which is being carried out in connection with the employment of sulphur as a fertilizer. The time has, of course, by no means arrived for the general application of sulphur in lieu of the more familiar fertilizers, but there would seem to be something in the suggestion that sulphur deficiency in certain cases may be responsible for indifferent results which are usually ascribed to other causes. Much of the present-day interest in the matter is to be found in America, where attention has been directed to the possibilities of sulphur by French experiments which were carried out some ten or fifteen years ago. In the main, the French studies were concerned with the fertilizing action, both direct and indirect, which sulphur exerts in the soil; but the American experience has been along somewhat different lines, an attempt having been made to classify and record the increased production derived from the application of sulphur, while a good deal of work has centred round the control of soil diseases by means of the same material.

It must be admitted that the whole position as regards both fertilizing action and ultimate effect is decidedly indefinite, and it is, perhaps, scarcely possible to agree as yet with the assertion that in some soils sulphur may be a limiting factor, and that crop increases which have followed the application of superphosphates or sulphate of ammonia are probably due to the sulphur content rather than to the phosphoric acid or nitrogen of such materials. It is, moreover, particularly difficult to find any specific opinions as to the proper amount of sulphur to apply, although Dr. H. Clay Lint, of the Texas Gulf Sulphur Company, has recently quoted results which place the quantity between the rather wide limits of 275 and 450 lbs. per acre. He states, moreover, that the application should take place in the autumn, but it depends upon the characteristics of the soil as to whether it should be a surface treatment or a deep application. It is, however, as well to bear in mind the opinion of Mr. C. C. Fletcher, of the U. S. Bureau of Soils, who stated that an application of 40 lbs. per acre had been found satisfactory. Quite recently Prof. Marcard, of the Bordeaux Faculty of Sciences, published a thesis on the use of sulphur as a fertilizer in which he draws the following conclusion :— (1) that sulphur placed in the soil transforms itself not only into sulphuric acid, but also into hydrogen sulphide in certain conditions; (2) this hydrogen sulphide contributes to the partial disinfection of the soil, facilitates the ammonification of organic compounds, and opens the way for active nitrification the following spring; and (3) sulphur is not only a disinfectant, but is also a fertilizer.

The Exchange Problem.

By A. S. Venkataraman, B.A., L.T.

At every crossing of the roads in her march, India finds the sign-posts pointing to England. Whether it is Railways, Industries, Posts or Currency or anything else for that matter, English interests must first be served and any treatment that does not address itself to this aspect of the question is to that extent necessarily incomplete. A deeper attention and a closer study compels this inevitable inference in the long run and this aspect is as strongly pronounced in Exchange and Currency, as in anything else.

The Present Situation.

That the Exchange situation is far from satisfactory is an admitted fact. Even Sir Basil Blackett admits that a mistake was committed in 1920 and this is an euphemism for Mr. Jamnadas Mehta's observation that a fraud has been committed on India. The sequel to the 2s. ratio has been a contraction of the currency and enormous losses, a loss of 50 crores and another 30 crores, that would not have been incurred, had the Exchange been different. The artificialities in the situation, the manipulation by the Government, the Secretary of State keeping more funds than are necessary and above all the difference between the market rate and the arbitrary rate (in spite of Sir Basil's dictum that the 2s. rate is fictitious) have been condemned in unequivocal terms by the Indian intelligentsia, inside or outside the legislatures. Recently Mr. Jamnadas observed that India has been defrauded of 40 crores by the sale of Reverse Councils. The Paper Currency Act Amendment Bill, with the object of increasing currency by 15 crores by adding 15 crores to the sterling securities, has been passed in order to meet the requirements of trade, as well as the non-official motion for the appointment of a committee with an Indian majority to examine the currency question.

Remedies.

Exact diagnosis makes for success in treatment and doctors generally do not admit their failures in operation and the saving clause for them is " The operation was successful but the patient sank ", the patient being removed from the table, as soon as the operation is over. Sir Basil is slow to admit the wrongs done to Indian Currency and his remedy is quite different from that devised by the non-officials. To stabilize or not to stabilize is the question. Stabilization is generally understood to mean a restoration to 1s.4d. gold, pre-war exchange and the Finance Member is opposed to it. Who knows that he may not be willing to have a statutory ratio of 1s. 6d., as the exchange is at present ! A restoration to the pre-war exchange is advocated by such members in the Assembly as Sir Purushottamdas, Mr. Mehta and others. In his speech in the Assembly, the Finance Member is reported to have instituted a comparison between the Indian and the American and English price-levels in order to establish his proposition that India did not suffer for want of any fixed ratio between gold and silver. One wonders whether this is not the reason why too much liberties had been taken in the past in fixing the ratio. He also brow-beats the advocates of 1s. 4d. gold. He shares the view that this ratio is not healthy. Perhaps it lasted for 2 decades but the 2s. rate was more historic. He remarks that it is risky to tie the Rupee to gold or sterling and describes the prospect of a rise in prices, hence of salaries, wages, etc., if any such ratio is determined upon. India, being an importer of gold, the effect of cheapening gold in terms of silver would be disastrous. After all, neither is 1s. 4d. gold an ideal rate nor is 2s. gold a sacrosanct rate. The burden of his song is, that when world prices, world conditions are taken into account, the demand for stabilization is premature. But the majority of the non-officials under the leadership of Sir Purushottamdas, Mr. Mehta, and others emphasize the necessity for an automatic currency and a return to the pre-war exchange in company with other countires. The 2s. rate is not harmless, as the Finance Member would make us believe.

What was required was a permanent addition, not a temporary addition, as proposed by the Paper Currency Act Amendment Bill. A gold standard was necessary, not manipulation as was done in the policy of Reverse Councils. The Finance Member's proposal to increase the currency by 15 crores was met by a telling retort from Sir Purushottamdas. He proposed that if the pound be made equivalent to Rs. 15, the present sterling securities now valued at Rs. 10, would be worth 1½ times what they are, in which case, there might be an addition of 30 or 40 crores and he describes this process as automatic and self-adjusting. The point at issue is, whether the need for additional currency is imperative, especially when it has been admitted that there is still a difference of 7½ crores to reach the limit already prescribed and the acuteness of the problem lies in this, namely, whether these successive additions to currency leading to inflation of prices are in any way justifiable, when prices are returning to the older level. I fear that the seriousness of the situation has been, in a large measure, due to profuse currency, greater and greater additions out of all proportion to the requirements of the country.

A Retrospect.

To examine a problem in all its bearings, one should look before and after. A splendid opportunity for launching a Gold standard presented itself in 1920, when the bullion value of the Rupee became higher than its face value and when it did pay one to melt the Rupee. A large portion of Rupees as silver might have been profitably disposed of for buying gold and opening a mint for free gold coinage. But it was *ultra vires* of the Babington-Smith Committee which was enjoined not to depart from the Gold Exchange Standard. While it was beyond its competence to do away with the Gold Exchange Standard, it did advocate an alteration of the ratio to 2s. gold, and this proposal was at once given effect to by the Government. One wonders whether India, besides being sacrificed to English interests, was not experimented upon as well. The treatment has all along been symptomatic, such treatment now and then giving rise to novel and unforeseen complications. When the ratio was altered and when the Government enforced it, losses in crores were sustained so as to compel the Government to allow the market conditions to fix the exchange. It was quite impossible for the Government to have adopted a policy of benevolent neutrality and a policy of inaction, especially when the mints were not free, was bound to spell disaster. A policy of *roi faineant* in 1893 raised the rupee from 13d. to 16d. in 1898. Similarly if the Government marks time and when the European countries are returning to the pre-war exchange, no more disastrous policy can be devised.

2s. Rate.

Sir Basil harps upon the supreme string that the 2s. ratio is fictitious and probably even if 1s. 4d. is restored by statute, it might, in effect, be made fictitious. Then perhaps the change would be only from the frying pan into the fire. This is not the view taken by responsible non-officials. As a matter of fact, this 2s. rate was responsible for the 9% bank-rate in the recent past, for the inadequacy of facilities to satisfy the country's currency needs; and again, against the Government's temporary addition to the currency by any purchase abroad, the amount that could be issued in India was that fixed by the artificial, arbitrary, official ratio, not the natural market rate, as, for instance, 12 crores, not the exchange equivalent of 18 crores, issued against a purchase of 12 million sterling. After all, the objective of the non-official opposition appears to prescribe an upward limit to the rise of exchange by the restoration of 1s. 4d. gold. Their rationale rests upon three among other grounds: (1) a desire for a ratio *per se* nearer reality than the 2s. rate, (2) a desire to revert to pre-war exchange along with other countries, (3) a re-action against the artificial and unnatural Reverse Councils which have been, not a little responsible for the serious havoc in Indian Currency and which meant really a flight of capital and an exportation of gold, as Dr. Ambedkar will have it, in spite of Mr. Keynes' opinion to the contrary, at a time when India really ought to have obtained more gold, if things had been left to their normal course.

"Let Alone" Policy.

The Finance Member holds the brief for a "let alone" policy. In fact, as already hinted, as long as the mints are not open, as long as there is an appreciable difference between the official and the market rate, no "let alone" policy can be pursued with any advantage to the country; and, in fact, the Finance Member's precaution to prevent the exchange from rising higher than 1s. 6d., by means of remittances to prevent inflations, is proof conclusive on this point; and his endeavour to increase the limit of securities to 100 crores from 85 crores is proof positive that a policy of inaction will never do.

Conclusion.

In fact, the proposals so far being made, official or non-official, touch only the fringe of the problem in so far as their scope is limited to improvements in the Gold Exchange Standard. Gold Standard must be definitely declared to be the goal and honest efforts should be made to establish an effective standard. Prof. Cannan in his foreword to Dr. Ambedkar's book on 'The Problem of the Rupee' says, "A token Rupee Currency has been maintained in India not because Indians dislike gold but because Europeans like it so well that they cannot bear to part with it." He shares the view—a sane view—that the saving in the shape of metallic currency effected by the exchange standard, is a trifling amount almost infinitesimal beside the advantage of having a currency more difficult for administrators and legislators to tamper with. He stresses the point that the recent experience of the war shows that the simple gold standard is far nearer being fool-proof and knave-proof than the Gold Exchange Standard and pleads that the congestion of gold in the West might be relieved by allowing gold to flow towards the East by the introduction of gold currency thereunto. In spite of all that is said and done, Gold Standard is still far off! Perhaps the Gold Exchange Standard is, as it has been well described, the hall-mark of a dependency as the Gold Standard is the hall-mark of a Dominion Government.

Standardization of Paper.

A new push is being made by printers who are desirous of seeing paper standardized in certain directions. For several years past the Master Printers' Federation has been endeavouring to secure the co-operation of paper-makers and merchants in putting into force the scheme of paper standards adopted by the successive conferences of master printers. Briefly the proposal is to abolish the quire and the ream and replace them by the mile, which is simply a 1,000 sheet ream, made up in convenient packets of 500, 250 or 100. Boards would be sold per 100 instead of per gross, and would be specified as to thickness or substance by numerals, representing apparently thousandths of an inch or the nearest agreed unit. Paper thicknesses or weights would be arranged on a substance number basis similar to the method so successfully and beneficially practised in Canada and the States. Paper sizes would also be of set dimensions.

The proposition with which paper merchants are now faced is that many of the leading printers have decided to deal mainly with paper houses who adopt the new standards. Exactly how this decision will be put into practice is not yet clear. Paper merchants must inevitably carry stock both ways in order to meet the requirements of those customers who desire standard papers and those who do not. The advantages of standardization cannot be disputed, and each section of the allied industry will reap its benefits in the end. The difficulty is to inaugurate the movement and get smoothly through the period of transition. There are many practical points of advantage and economy to be found in the proposed system. Stocks of paper would ultimately be conserved; better output and more consistent machine running would be assured to the maker. Printers' errors and difficulties would be lessened by the elimination of chaotic paper customs. Calculations would be simplified for all concerned in handling both paper and paper accounts. Finally, paper merchants are presented with an opportunity to render paper users real merchanting service by appreciating and meeting their desires.

Population Problems from the Indian Census.*

By J. A. Marten, M.A., I.C.S.

The population of India as a whole and, with the exception of Assam and some few concentrated industrial areas, of the administrative units—the Provinces and States—is self-contained. Migration is small and quantitatively unimportant. The population grows by natural reproduction, the chief characteristics of this growth being a high birth rate, owing chiefly to the universality of marriage, and a correspondingly high death rate, a large proportion of which represents infant mortality. The measure of progress, *i.e.*, the difference between the birth and death rates, is not greater than that of many countries of Europe, and may, perhaps, be estimated at a normal of 7 or 8 per cent in a decade. It would be interesting if we could arrive at some definite estimate of the factors which govern the standards of growth and the periodical fluctuations from them. The official birth and death rates are too incomplete and imperfect to be of much use, and they do not classify the community in different social and economic strata. It is frequently stated that the variations in the "economic" circumstances of the people, due to good and bad harvests, form the principal factors in determining the variations in the birth and death rates. A confusion arises from the use of the word economic. In its wider sense, *i.e.*, as referring to all the conditions and circumstances of a "household," social, traditional, material, and domestic, the word expresses somewhat the same idea as that contained in the expression "standard of life". But it is easy to slip from the wider to the more restricted use of the word, as implying merely the financial and material resources of living, and this is where I think a very popular fallacy arises. In India, as in every other country, the most prolific portion of the population is at the lowest stratum, and modern theories incline to the view that a maximum fertility is associated with a simplicity of life, which usually includes a minimum subsistence diet, and that fertility automatically declines as life becomes more complex, more luxurious, more individualized, and more subject to nervous strain. This economic simplicity of living in the larger portion of the Indian population, along with the custom of universal marriage, has given India a high average birth rate. Diseases, due to climate and physical conditions, combined with the non-hygienic customs and traditions of the people, and their ignorance and indifference to maternal and infant welfare, lessen their resistance to disease and keep up the level of the death rate. These are the constants which regulate the vital standards, and which can change only slowly with the progress of education and social culture and with the improvement of the environment. Of the fluctuating influences which determine the periodical variation from the average the most important, if we except catastrophic years of famine, is the direct effect of climate on health, and not, I think, the smaller variations in the material conditions of the people. In the matter of housing, clothing, and diet the lowest strata of the Indian people are probably not worse off than the slum population of western towns, taking into consideration the differences of climate; and Mr. Calvert, in his interesting book, "The Wealth and Welfare of the Punjab," is able to show that the average Punjab peasant lives at a standard of life which is distinctly above that of a large portion of the peasantry in Southern and Eastern Europe. It has usually been held that high prices are accompanied by a high death rate, but the Health Officer of Bengal has recently shown that the opposite is the case. Dr. Mann, in his study of economic conditions in the Bombay Presidency, shows that the economic effect of prices differs in different classes of the agricultural community, and it is well known that dry years are, on the whole, the healthiest, though they are not usually years of economic prosperity. On the one hand, there appears to be an intimate connection between the quantity and distribution of

* Part of a Paper read before the Society of Arts, London.

the rainfall and the intensity of the infection of the diseases, such as malaria, dysentery and so forth, which are chiefly responsible for the mortality, while on the other hand there is always in an agricultural population, even among those near the subsistence limit, a considerable margin of resource, which enables them to resist in a remarkable way temporary economic stringency.

The annual fluctuations of the birth and death rates are, therefore, probably much more dependent on the intensity and onslaught of the principal diseases than on any supposed variations in the resisting power to them of the people, owing to economic circumstances. In a graph showing the death rates over a long period of years a mean line drawn through the fluctuations would indicate the cultural and material progress of the population and its surroundings, while the annual fluctuations from the mean would show usually the result of temporary climatic and environmental changes and only occasionally economic catastrophes. The undoubted development of material resources has not, in the ordinary agricultural community, been accompanied by a cultural advance such as would affect the population quantitatively. To put the argument as simply as possible, if you could double or treble the annual income of every family in the poorer portions of the population, the effect on the vital statistics would not be noticeable for several decades, while if you could ensure each household against the economic effect of the ordinary fluctuations of the harvests it would not affect the annual variations in the birth and death rates. The chief factors are cultural, climate, and environmental rather than directly economic.

He went on to deal with migration, and said that the birthplace statistics of the Census give a valuable indication as to the manner in which local pressure of population is being relieved by redistribution. The completion of the great irrigation works of the Jhelum and Chenab Rivers have thrown open in the last ten years large areas of land in Northern India for cultivation. There has been an important movement of surplus population from the congested tracts of the centre and north of the Punjab into the canal areas of the south-west of the province. In the east of India the undeveloped lands of Assam have attracted thousands of permanent agricultural colonists from the dense areas of Eastern Bengal, while the tea garden population is steadily drawn from the lower strata of the United Provinces, Central Provinces, and Bihar and Orissa. Assam has almost doubled her population in the last fifty years, and it has been calculated that nearly a quarter of her present population is of foreign extraction. In the same way the waste lands of Orissa and the Santal Parganas are attracting increasing numbers of colonists from the neighbouring areas, especially the congested areas of the Ganges Valley in the United Provinces. But apart from the movements, of agricultural colonists, there are important streams of labour migration, partly for agricultural and partly for industrial purposes. Bighar and the western portions of the Central Provinces pour out their labouring population eastward to gather the harvests of Bengal and to fill the coal mines, jute factories and docks of the eastern industrial areas. The United Provinces sends three-quarters of a million labourers to Bengal, Bombay, the Central Provinces, Assam, and Burma. The enormous reservoir of labour filled by the backward classes of the Madras Presidency overflows into the plantations of Mysore and Travancore, and supplies the larger part of the overseas stream to the plantations and factories of Ceylon, the Malay States, and Burma. Burma has now more than half a million Indians, two-thirds of whom are Hindus or aboriginals. The majority are labourers from Madras, Bengal, and the United Provinces, and the increase in the decade is about 16 per cent. Labour emigration out of India has recently been checked by legislation, but there are nearly $1\frac{3}{4}$ millions of Indians in other parts of the British Empire, most of whom are labourers. While a considerable part of the movement of labour in India is periodic and temporary, the labourers leaving their families behind and returning to their homes after the harvests or at periodic intervals, there is undoubtedly an increasing tendency towards permanent movement and settle-

ment, and in many cases the migration which is here described, and which the improvement of communications has done much to stimulate, is an important factor both in the material improvement of the resources of the people, and as a moral stimulus which is gradually overcoming the conservative and immobile character of the population.

Another aspect of the redistribution of the population which has in India some interesting and characteristic features is the distribution between country and town. The Indian is not, as a rule, a genuine town dweller, and urbanization has made very slow progress, the whole increase in the urban population in the last thirty years amounting only to 1 per cent. Even this increase is confined within very limited areas. Many of the areas classed as towns have few genuine urban characteristics, a considerable portion of their population being actually or virtually agricultural. The figures show very clearly that the medium-sized country town is either stationary or decadent, and that it is only, or at any rate chiefly, in the large towns and cities that, under the influence of commercial or industrial expansion, there has been any considerable growth of population. In these larger classes of towns—*viz.*, towns of over 50,000 persons, the increase in the urban population amounts to 16 per cent or more in the decade ; in towns between 20,000 and 50,000, 8 per cent, and in towns between 10,000 and 20,000, less than 1 per cent. A somewhat ominous feature in connection with this urban industrialization is disclosed by the sex statistics of the larger industrial towns. While, for example, in Bengal the proportion of women to men in all towns has been steadily falling, showing that a growing proportion of the town populations consists of more or less temporary immigrants who have left their families behind, this growing disparity in the sex ratio is specially conspicuous in Calcutta and the industrial towns, and is becoming a real danger signal. The influx into the industrial areas of male labourers who have left their families behind has steadily increased, so that in Calcutta males outnumber females by over two to one ; and the corresponding change in the average sized industrial or commercial town is still more remarkable. In Calcutta, there are only 374 married women per 1,000 married men, and only 47 per cent of the women were returned as married. The male labourers being nearly all married with a wife somewhere away at home in the country, this disparity means that most of the workers are leading an unnatural existence, missing the steadying influence of home life, and only anxious to earn enough to get back to their homes and families. It is not unnatural that their employers find that they have little heart in their work and that they are notoriously unsteady. Similar conditions obtain in other large industrial centres.

In point of view of interest and importance the statistics of occupation are the most valuable of all those obtained at a periodical census. At the same time they are undoubtedly the most difficult to collect with accuracy and compile with precision. In the first place, we must decide whether we desire to know the means of subsistence of the whole population or the occupation of workers only or both. If we wish to record occupation as well as means of subsistence as has been done since 1901 in India it is necessary to distinguish between workers and dependants, and here we are faced with the first difficulty, since a large part of the population, including many women and children, contribute by work something to the resources of a household without necessarily being full-time workers. Again a man may have several occupations, all of which are remunerative. He should obviously be entered under the category which includes his primary or most remunerative occupation, but it is not always easy to say which this is, especially in such cases as agricultural labour combined with weaving, or fishing with boating and so forth, which form the dual occupations of so large a part of the lower classes. The distinctions between worker and dependant and between dual occupations involve subtleties of interpretation which continually give trouble in individual cases and the extent to which the occupations of women and children actually contribute to the income of a family must always be a matter of opinion and give rise to inconsistencies in the

returns. Having obtained our statistics, it is necessary to classify them under appropriate categories. Experience shows that the Indian statistics are not sufficiently accurate to admit of an extremely detailed classification. The scheme used at the present census is the same, with some small modifications, as that introduced in 1911 by Sir Edward Gait, and is founded on a classification scheme devised by Bertillon, which has been adopted in a modified form for the census of England and of some of the dominions. It must, however, be remembered that the occupational statistics collected in the census give at best only a general sketch of the functional distribution of the people, and are too vague and imperfect to afford any detailed comparison in most of the smaller categories with statistics of the past or figures of other countries.

India is essentially an agricultural country and agriculture proper supports 224 millions of persons, or 71 per cent of the population of the Empire. If we add the pastoral and hunting occupations, the percentage is 73. Industries support 10 per cent of the population but the bulk of these are unorganized industries connected with the supply of personal and household necessities and the simple implements of work. Organized industries occupy only 1 per cent of the people. In trade and transport on which less than 6 per cent and 2 per cent respectively depend, a not inconsiderable number are connected with the disposal of the various kinds of agricultural products. The administration and protection of the country engages less than five millions or $1\frac{1}{2}$ per cent of the population and the remainder are supported by domestic and miscellaneous occupations. Though the extent to which agriculture predominates varies in different provinces, there is no region in which it does not in some form easily take first place. Of industrial workers the largest proportions in the local populations are in the Punjab, the United Provinces, and in Bombay. The industrial occupations are, of course, in India mostly of the cottage industry type. In Bombay the development of organized industries is of considerable importance, but it is largely confined to a few of the biggest cities. Compared with 1911, agriculturists have increased a little faster than the total population ; so also has trade, especially trade in textiles. Industries, however, have substantially decreased, the textile workers having dropped considerably. As has already been said, however, too much emphasis must not be laid on these comparisons. The huge amorphous category of "labour", which fluctuates between agricultural and industrial employment and is capable of being recorded equally under either group, is almost sufficient to turn the scale, where the general increase in the population has been so small as in the present decade. But there seems to have been a real increase in the number of cultivators in the United Provinces at the expense of labour, and the rise in the Punjab is undoubtedly due to the extension of the canal irrigation areas.

The term "agricultural occupation" includes the owners of land who receive rent from the land, the actual cultivators of the land, and the farm and field labourers. We distinguish the figures under these various categories, and some interesting comparisons can be made between these figures themselves and between them and figures obtainable from other official records. For example, we can illustrate the varying size of landed property in Bengal by calculating that the number of cultivators per 100 landlords varies from over 17,000 in the Chittagong Hills to 750 in Howrah. Or an even more interesting comparison can be made between the number of cultivators (workers) and the acreage cultivated. The figures for some of the main provinces show variations between 1,215 acres per 100 cultivators in Bombay to 251 acres in the United Provinces. India is a country of comparatively small holdings, often of the allotment size, but cultivated on an extensive system applicable to large areas and under a method which, as it utilizes to the full neither the energy of the worker nor the productivity of the soil, is the reverse of economic. In the British territory of Bengal there is an average of $2\frac{1}{4}$ acres to each agricultural worker, including cultivator and

labourer. It is in such figures that the explanation of the poverty of the cultivator lies. The cultivation of such a plot cannot employ a man for more than a comparatively small number of days in the year, and even in the Punjab Mr. Calvert estimates that the work done by the ordinary cultivator does not represent more than 150 days of full labour in twelve months, and that even in the occupied days the idea of the Indian cultivator of what constitutes a full day's task is well below that prevalent in more progressive countries. If Mr. Gandhi could find to occupy the leisure of the cultivator something which is not quite so economically hopeless as yarn-spinning he would confer a real boon on the Indian peasant. Another interesting comparison could be made between the number of field labourers and the number of cultivators. For example, in Bengal the number of field and farm labourers works out to an average of one labourer to every five cultivators, and in Eastern Bengal to as few as 1 labourer to 8 cultivators. We may contrast the conditions in England and Wales, where, according to the census of 1911, there were over 3 hired labourers to each farmer, and in 1851, before the spread of machinery, there were in England about 6 labourers to each farmer. In the United Provinces the proportion is approximately 1 labourer to every 6 cultivators. These figures again illustrate the fact that the average holding is usually so small that the cultivation of it is not too much for the owner of it himself to accomplish.

Non-Brahmins and Intelligence.

By Dr. M. V. Gopalaswamy, B.A., Ph.D., (London)
Professor of Philosophy of the Mysore University.

Intelligence tests like other things have passed through the ordeal of the late war and have come out triumphant as a result of the colossal labours of the American Army Psychological Staff. Since then one finds in western countries the Mental Tester is ever on the move from one field of application to another, he moves from the school-rooms to the barrack-halls, and from there to the great business-houses and the factories.

In the light of such vastly increased conquests of fresh realms for the application of Intelligence Tests, one does not need many words of apology for attempting to apply these Tests in India with a view to helping towards a better understanding of the psychological basis underlying the present-day socio-political problems that beset and hamper our progress on every side.

Brahmin *Vs.* Non-Brahmin.

Now one of these questions of first rate importance, at least as far as South India is concerned, is the theory question of the Brahmins *versus* the Non-Brahmins. Apart from the communal passions which are but thinly veiled below the surface, there must be some real or at least fancied reasons at the back of all this agitation for special treatment, and protection from the Brahmanical domination. Now the two sins that are often laid at the door of the Brahmin are that he is too 'Clanish,' too 'Cunning,' and that he is too 'Wily'—shall we say more intelligent ?

It is but notoriously true that the Brahmin has in the past jealously guarded the road to official preferment and has kept all the fruits of such spoils to himself. Now in the clanish monopoly of certain trades the Brahmin is not the only one to err. With his clan spirit we are not so much concerned here. But it would be interesting to enquire what support the Mental Tests would afford to the second charge that the Brahmin is too 'Cunning'.

Ballard's Tests.

The Mental Tests employed for the purposes of this investigation consisted of a combination of Ballard's Absurdities Tests and his Best Reason Tests. Both these Tests of Ballard were modified considerably to suit local conditions and then translated into Kannada in which language the tests were given to some hundreds of school children in the city of Mysore. Their ages range between 9 and

17 years, the average being at 14 years. For the benefit of the uninitiated I might be pardoned for giving one or two examples of the Absurdities and Reasoning Tests here. In the first series of tests a number of absurd statements are made which are immediately followed by 4 alternative explanations purporting to point out what is absurd in the previous statement. All that the boy that takes the test will have to do is just to tick off that explanation that he thinks the best out of the given four, thus :—

A man bought a dog that had been advertised. He complained to the seller that the dog's legs were too short. The seller replied, " They are long enough to reach the ground, aren't they ? What more do you want ?"

This is absurd because :—

A. Some kinds of dogs always have short legs.

B. A dog's legs might reach the ground and yet be both ugly and useless.

C. We cannot make dog's legs longer by stretching them.

D. The dog-seller is a great cheat.

Again as an example of the Reasoning Tests we might take the following :—

Before undertaking anything very important you should—

A. Plan it all out properly.

B. Wash your face and hands clean.

C. Pass an examination.

D. Consult an astrologer.

Each right answer in either of the tests scored 5 marks. The Absurdities Tests carried a maximum of 100 marks and the Reasoning Tests a maximum of 75 marks. We give below the distribution marks for the data classified into two groups—Brahmins and Non-Brahmins.

Marks on the Intelligence Scale	Frequencies Brahmin	Non-Brahmin
65	0	7
70	7	20
75	14	34
80	17	42
85	24	44
90	31	45
95	36	48
100	39	48
105	37	43
110	35	32
115	30	21
120	25	10
125	17	0
130	9	0
135	0	0

Conclusions.

The above distribution table of frequencies, though they do not prove, seem to suggest the following conclusions :—

1. That the Non-Brahmin average is not below that of the Brahmin, is a fact well worth pondering about : the central tendencies (Mode) of both groups being 100 marks.

2. Nevertheless there is a remarkable difference between these two groups from the point of view of their scatter, or variability round the average. While we obtain a very good normal curve in the case of the Brahmin group, the data of the Non-Brahmin group do not conform to the normal curve.

3. There is an abnormal flatness about the middle region of the Non-Brahmin curve, *i.e.*, from 80 to 105 marks. Now this would seem to suggest that the Non-Brahmin group relative to the Brahmin group lacks homogeneity. Probably this flat range of 25 points represents the region where the averages of the different communities all converge and partially overlap one another.

Thus it is possible that each Non-Brahmin community like that of the Christians, the Mahomedans, the Vokkaligas, has its own separate average lying somewhere between 80 and 105.

4. If this is true an important practical corollary would be that the different Non-Brahmin communities do not all require the same measure of protection and special favoured treatment. Some of these communities, it would seem, are quite equal to the Brahmins in mental capacity. The other communities in so far as their averages are lower would certainly need special treatment; but such treatment, it would seem, will have in future to be more discriminate as amongst the various Non-Brahmin communities themselves.

The Economic Condition of Soviet Russia.

By S. V. Ayyar, M.A., Dacca University.

This little book written by Mr. S. N. Prokopovitez, an ex-Professor of Economics in the University of Moscow, is a welcome contribution to the scanty literature on Bolshevism and the facts of life in Russia.

Prof. Prokopovitez divides his book of 220 pages into 4 sections :—

1. The Nationalization of Industry.
2. Soviet Government and the Peasants.
3. The New Economic Policy.
4. Finance.

Writing on the question of 'Nationalization' Prof. Prokopovitez quotes the speech of A. Rykov, the President of the Supreme Council of Natural Economy, thus : 'Nationalization has been resorted to, partly because the rules concerning workers' control have not been fulfilled, partly because the employers and administration have fled, partly because the orders of the Soviet have not been carried out.' Nationalization prompted by the necessity of direct action against the Bourgeoisie was being carried out independently of all economic considerations. Says Prokopovitez : The workers looked upon each 'nationalized' enterprize as their own property and they ran them especially in the very first period of the proletarian revolution without any reference to National Economy as a whole. The workers and not the State became the employers in the 'nationalized' industries and the ideas of 'Revolutionary Syndicalism' were carried out in practice. 'Capitalist anarchy was superseded by proletarian anarchy' which, in the opinion of Laxousky, would automatically lead to the disorganization and collapse of Industry.

The Economic System established in Russian Industry, says the writer, after its nationalization represents an attempt not only to plan out the organization of Industry, but to plan it according to definite communist principles in an atmosphere of revolution. The productivity of industry under the Soviet administration is given by P. I. Popoi, the Director of the Central Statistical Bureau.

Year	Total in million gold roubles	Percentage
1912	6,059.2	100
1920	835.8	13.8
1921	870.0	14.4
1922	969.5	16.0

Prof. Prokopovitez estimates that in 1916-17 the productivity of Russian Industry was about 71% of pre-war times and that while war was responsible for a fall of 29% the revolution, civil war, and communist experiments were responsible for 57% or twice as much.

According to Mr. S. G. Strumilin, the productivity of a factory worker changed as follows :—

1913	..	100%
1914	..	101.5%
1915	..	125.8%
1916	..	127.5%
1917	..	85.5%
1918	..	44.0%
1919	..	20.2%

Prof. Prokopovitez attributes the collapse of Russian industry to the introduction of communist principles which presupposes rightly or wrongly two conditions :—

1. No connection between the wages and the output of the worker ;
2. Equalization in the maintenance of the workers.

According to the Russian labour code of 1918 the maximum remuneration exceeded the minimum by 75% only and we have the application of these ideas in practice in the Statistics of Production. In this connection Trotsky's views on Socialism are interesting ; 'Under the new regime every worker is to be regarded as a soldier of the army of labour, he has to obey the command of the Government. It is said that compulsory labour is not productive. If that is so, socialism is bound to fail as there is no other way to socialism. Militarism of labour is the essential and unavoidable means of organizing labour during the period of transition from capitalism to communism. In 1922

the labour code was revised, and the commissary of labour recognized 'that equalized remuneration has led to a grave economic absurdity, *viz.*, remuneration of labour transformed into social relief, which has deprived the worker of the essential stimulus for normal production.' Trotsky in March 1922 recognized that the Russian plan failed because Russia was not sufficiently prepared for it; but Prof. Prokopovitez remarks—'The whole history of the three years of communist reign proves that the dislocation of industry was due to the principles themselves, and to the absence of all economic calculation.'

Prof. Prokopovitez says that the Financial administration of the Soviet has been an utter failure. 'There was no attempt either at economy or at making the expenditure more or less to conform with the expected revenue. There was not even any conformity between the estimates and the spending possibilities.' The Budget was looked upon as a mere formality. Taxation under the Soviets was not so much to contribute to the State Budget as to serve as a means of gradually weakening and suppressing private economy and turning it into an organized socialistic one. The following summary of the features of the Soviet Budget on its revenue side is worth noting :—

1. A large discrepancy between the estimates and the actual receipts.

2. The extinction of the customary forms of taxation, *viz.*, direct and indirect taxation and customs.

3. The introduction of new forms of taxation in the form of direct expropriation of the Bourgeois class and the figures of the Budget are instructive :

	Expenditure	Rev.	Deficit	Per cent to Expenditure	Paper money issued
1918	46.7	15.6	31.1	66.6	34.0
1919	215.4	49.0	166.4	77.3	163.7
1920	1,215.2	159.6	1,055.6	86.9	943.6
1921	24,471.9	4,139.8	20,332.0	83.1	16,370.9

A deficit, says the Professor, of 87% of the expenditure estimate is unprecedented in history, but so also is the Russian experiment in government. Prof. Prokopovitez opines that the insolvency of the nationalized industries is mainly responsible for the Budget deficits of the Soviet government. The author has a great deal to say against the paper currency policies of the Soviet and her methods of public finance. The economic policy of the communist party reads : "In the first period of transition from capitalism to communism the abolition of money appears impossible. In view of that..... and having centralized the banks, the Russian communist party must strive at enlarging the sphere of accounts effected without the help of money and thus prepare for its total abolition. This idea is strongly criticized as being almost suicidal."

Pro. Prokopovitez's conclusion is decisive. Says he : "It is to be hoped that the instinct of self-preservation will help the great Russian people to discover the ways and means of curing itself of the *terrible* disease from which it has been suffering for six long years." It is no wonder that the Professor was banished from Russia.

The organization of vocational guidance in France is being pursued with energy in the various industrial centres of France. Some information on the working during 1923 of the Lyons Office of Vocational Guidance and the Placing of Apprentices taken from the annual report of the Office recently published in a French Review is given below:

The office is under the control of a Committee composed of representatives of employers and workers, the medical profession and the administration, and is subsidized by the Department of Technical Education. The report contains statistical details on results achieved during the year, disqualification observed (215% economic, 25% psychological, 53.5% physical), action taken on advice given, and the number of apprentices placed (614, of women 117 in 16 general technical groups). The Lyons Office of Vocational Guidance bases its action on :— (1) medical examinations carried out by the school inspectorate ; (2) collaboration with the schools which keep personal particulars of the scholars, showing not only their scholastic attainments, but also and more especially their aptitudes and mental ability; (3) constant survey of the situation on the labour market.

India's Railway Budget.

By Sir Charles Innes.

[*In the Indian Legislative Assembly on Feb.* 21, *before a fairly crowded house, Sir Charles Innes, Member for Commerce and Railways, presented the Railway Budget for* 1925-26. *Mr. Hindley presented an identical Budget statement in the Council of State. The following is the text of Sir Charles Innes' speech, which is a lucid survey of the essentials underlying ths separation of Railway from General Finance.*—ED., *M. E. J.*]

This is an important occasion, for we are inaugurating to-day the new Budget procedure, which the separation of our railway finance from general finance has rendered possible. Under the convention to which the House agreed last September, the railway contribution to the general revenues of the country, is in a great part known figure. This is why I am to-day introducing the Railway Budget in advance of the General Budget. I can do so, without giving away any of those secrets, which my Hon'ble colleague on my right guards so jealously and in the matter of procedure alone, I hope that the House will agree with me, that we get solid advantages from the new procedure. In the first place, I would beg the House to observe, that the Budget itself is not a mere departmental compilation.

The Railway Finance Committee, a committee elected by this House and containing only one official member, has examined the Budget in detail and has approved generally of it. I take this opportunity of thanking them for their labours.

As the House will see from the printed proceedings of the Committee, which are being circulated, we worked them very hard and Mr. Sim, their Chairman, tells me that he derived the greatest benefit from their advice and criticism.

This year, I am afraid, that we had to rush them a little. We could not help ourselves for we ourselves had to work very hard in order to get the Budget in its new form, ready in time, but in future years, I hope we may be able to spread their Budget work over a longer period.

ADVANTAGES FROM THE NEW PROCEDURE.

Again, Sir, another advantage that we derive from the new procedure is, that we are able to give the House more time to consider the Railway Budget. A separate day is being given for a general discussion of the Budget and the House will have 4 days next week to consider the railway demands for grants. This allowance may strike the House as insufficient for a Budget, which deals with an expenditure amounting to some 90 crores of rupees. But at any rate, it is an improvement on the procedure last year, when six days were set aside for all the demands of the Government of India including railways and finally, Sir, we have attempted to place the Budget before the Assembly, in a form, which not only gives more information about our railway finances, but which will facilitate discussion.

Last year, there were merely two railway votes, one for capital and one for revenue. This year we have split the Budget into 15 votes. Two of them relate to strategic lines. The other 13 relate to commercial lines.

In addition to the general Budget Memorandum, we are circulating separate notes on each demand and we are also circulating separate statements regarding each and every railway, that comes into our Budget. These statements give for each railway the revised estimate for 1924-25 and the Budget estimate for 1925-26 and to each statement an explanatory memorandum is attached. It discusses how the railway has done this year, what its prospects for next year are, what its programme for development and betterment is, and what expenditure we propose from the depreciation fund.

We hope that by putting the Budget up in this form, we shall enable the House to keep an intelligent watch, not only on the development of the Indian Railway system as a whole, but on each railway and I hope also, that the amount of information we are giving to the House, will clear away the last

vestige of that suspicion, which, I think, lurked in the minds of some Hon'ble Members last September, that the object of the separation of railway finance, was to weaken the control of the Assembly over our Budget.

Before I leave the question of procedures I should like to add two remarks. The first is this : We do not regard the form in which we are putting up the Budget this year as the last word on the subject, of the best way of presenting the Railway Budget to the House. As I have already explained, we are working against time and we had to devise our own form. But we are quite open to suggestions for improvement, and if any suggestions are made, either in the House or by the Railway Finance Committee, they will be most carefully considered, before the time of the next Budget. My other remark is in the nature of an appeal. We are circulating with the Budget papers a statement which shows exactly what activities of the railway department each vote covers. We have done that, Sir, in order to let the Hon'ble Members, who wish to bring up any particular subject for discussion know under what vote that subject can most appropriately be discussed.

I hope that Hon'ble Members will carefully study the statement in order that our debates may proceed in an orderly and useful manner and may I also express the hope, that when Hon'ble Members put down motions for reductions, they will add a few words to explain exactly what point they wish to raise. I ask them to do this, in their own interests, as well as in the interests of the Government. For if we know beforehand exactly what subject each motion is intended to bring up, we shall come better prepared to give the information which the Hon'ble Member wants.

The Budget Estimates.

I come now to the Budget estimates. They are explained in the Budget Memorandum and I propose only to deal with the more important figures. My idea is, indeed, to make to the House, more or less, the sort of speech which the Chairman of a Board of Directors would make to the Shareholders of a Company. For I think, that it might fairly be said, that this is the position at which eventually we hope to arrive the revised estimate for 1924-25. Revenue : I take first, the revised revenue estimate for the current year. It is still only an estimate of course, but it is the best estimate we could make in the light of the latest figures available when we prepared the Budget. I will begin by giving the figures in the barest outline. We place our revised estimate of gross receipts, that is, gross traffic receipts, plus our share of the profits, of subsidized companies, plus miscellaneous receipts, at Rs. 98.01 crores. The figures of course are for commercial lines only.

Our revised estimate of our total charges, that is, working expenses, plus surplus profits, paid to Indian States and Railway Companies, plus interest charges, plus miscellaneous charges, amounts to Rs. 86.77 crores. We hope, therefore, that the gain from commercial lines, during the current year, will amount to Rs. 11.25 crores.

Comments on the revised estimate: Before I proceed to deal with the effect of these figures, upon our contribution to general revenues, in the current year, I should like to make one or two comments on these figures. Our gross receipts, if we realize them, will be nearly Rs. 5 crores better than the gross receipts of last year and more than 2½ crores better than our Budget estimate. But I have little to say about them, for the most part, the betterment is due to causes beyond our control, namely, good crops and improving trade. Had it not been for the disastrous floods, both in North and South India, our gross receipts would have been better still. Our expenditure figures are more interesting, if we exclude interest charges, surplus profits due to Indian States and Railway Companies and Miscellaneous Charges. We expect our working expenses in the current year to be Rs. 62 crores against Rs. 59.16 crores last year. But the figure Rs. 62 crores requires some explanation. To begin with, it has been decreased by a windfall of Rs. 1¼ crores, this sum represents a refund to revenue, of Customs duties paid on stores imported during recent years by company railways, which according to a recent privy council decision, they ought not to have paid.

If we disregard this windfall, our working expenses this year will amount to Rs. 63.25

crores or 4 crores more than last year. But the figures are still misleading. Last year we had no depreciation fund and we charged to revenue only our actual expenditure on renewals and replacements.

In the current year we charge to revenue our gross appropriations to the depreciation fund, namely, Rs. 10 crores, and not merely our estimated actual expenditure from the fund, namely, Rs. 805 lakhs. In order to compare our working expenses this year with those of last, we should deduct Rs. 195 lakhs from the figure Rs. 63.25 crores I have just given the House. If we compare the figures in this way, it means that this year, we have spent Rs. 61.30 crores in order to earn Rs. 98 crores. Last year we spent Rs. 59.16 crores in order to earn Rs. 93.18 crores. In other words, though we have earned nearly Rs. 5 crores more we have spent only Rs. 214 lakhs more. It is true that the rise in exchange has helped us to the extent of some Rs. 25 lakhs, but even so the figures are, I think, very satisfactory and reflect great credit on the Railway Board and on the Railway Administrations.

The House will remember that the Inchcape Committee set before us the standard that we should aim at earning 5½ per cent on our capital at charge. If our revised estimates prove correct, we shall have earned on commercial lines, on the capital invested by Government Rs. 5.46 per cent.

Contribution for 1924-25.

According to the convention agreed to by the Assembly last September the central revenues are entitled to receive from the railways a contribution equal to 1 per cent of the capital at charge in the penultimate year, plus 1.5 of the surplus profits in that year.

The Assembly also stipulated that if, after payment of the contribution so fixed, the amount available for transfer to railway reserves should exceed Rs. 3 crores, 1.3 of the excess over Rs. 3 crores should be paid to general revenues.

I proceed now to inform the House how much we expect to contribute this year to general revenues. The House will remember that it was specially arranged, that the contribution for the current year should be based not on the figures of 1922-23 (a year in which profit from railways was very small), but on those of 1923-24 and that what I may call, the fixed contribution for 1924-25 should be repeated in 1925-26. This fixed contribution calculated at 1 per cent of the capital at charge in 1923-24, plus 1.5 of the surplus profit of that year, amounts to 6.30 lakhs odd. That represents what I may call our fixed contribution for 1924-25 and 1925-26 to general revenues. General revenues have, however, to meet the loss on strategic lines and that loss is taken for purposes of convenience, as an offset against the amount due from commercial lines to general revenues. In 1923-24 this loss amounted to Rs. 121 lakhs, therefore the net contribution payable to general revenues in 1924-25 and 1925-26 is Rs. 509½ lakhs, but though for convenience sake we pay a net contribution of Rs. 509½ lakhs, I would beg the House to observe that they are taking from us under the convention Rs. 630 lakhs.

Now I mentioned just now that we anticipated that our gain from commercial lines during the current year would be Rs. 1,125 lakhs. But the estimated loss this year on strategic lines is Rs. 151 lakhs. The net gain therefore is Rs. 974 lakhs. From this amount we deduct the net contribution of Rs. 509½ lakhs and this leaves a balance of Rs. 465 lakhs. This is the amount for disposal. The excess over Rs. 3 crores is 165 lakhs, ⅓ of this or Rs. 55 lakhs has to be paid to general revenues and 410 lakhs go over to railway services. The general tax-payer, therefore, gets a net payment from railways of Rs. 564 lakhs or more than a crore, more than Sir Basil Blackett budgetted for and we get Rs. 410 lakhs into our reserve fund. But I would again emphasize that what the general tax-payer is really taking from commercial lines is not Rs. 564 lakhs but Rs. 685 lakhs.

Estimate of Revenue for 1925-26.

I pass on to the Budget estimate for 1925-26 and as in the case of the revised estimate for this year, I will first give a summary of the revenue figures. We are budgetting for gross receipts of Rs. 101 crores and for a gross expenditure of Rs. 91 crores. If the estimates prove correct, there will be a

gain from commercial lines of Rs. 10 crores. Receipts, of course, we cannot foresee what the year 1925-26 has in store for us.

As I have said, railway results are peculiarly dependent on the nature of the season and the state of trade and no one can forecast whether or not next year's monsoon will be a good one or not, but for the moment, the outlook is promising. It looks as if we might have a bumper wheat crop this year and we may also hope to carry in the early months of 1925-26 a larger proportion of the cotton crop than usual. At any rate this year's crop is reported to be bigger than that of last year and so far, less of it has come down to the ports. Given therefore, a normal monsoon and a fair state of trade, we hope that we shall top our figures of this year, good though they were and we are budgetting for gross receipts of Rs. 101 crores or Rs. 3 crores in excess of those of this year.

Remarks on Expenditure.

As regards expenditure I neglect for the moment such charges as interest charges and surplus profits paid to Indian States and railway companies and confine myself to working expenses proper. I have just explained that if we take no account of the windfall of Customs Duty our working expenses this year are expected to amount to Rs. 63.25 crores. Next year we are budgetting for a figure of Rs. 65.79 crores, or 2½ crores more. One reason for this excess is that we hope to make a beginning with a very important improvement, namely, the provision of automatic couplers, and we are providing 70 lakhs for that purpose. I may say that automatic couplers should result not only in great economy, but also in a diminution of the accidents among our staff. We are also setting aside 50 lakhs for speeding up the repairs to rolling stock, and we are allotting 50 lakhs to meet the cost of the measures we are now taking to get rid of surplus and unserviceable stores. I should also mention that 26 lakhs have been provided in the Budget for the cost of extending to the officers of the Company Railways the Lee Commission concessions with effect from the 1st of April last. We have thought it prudent to make this provision in the Budget, but I must make it plain that it has not yet been decided whether these benefits should be conferred on the officers of Company Railways in the whole or in part. It is a question which still has to be considered by the Government of India and the Secretary of State. If an allowance be made for these additions to our expenditure it will be seen that we hope to keep the direct cost of operation if anything below this year's figures. Our interest charges, owing to the new capital charges we are incurring, are likely to be some 82 lakhs higher in 1925-26, and as I have said, we are budgetting in all for the total charges amounting to 91 crores of rupees.

Contribution for 1925-26.

I have explained how we have calculated the contribution for 1924-25 and I will not go into the details regarding the contribution for 1925-26. It is sufficient to say that we expect our net contribution for 1925-26 to be 524 lakhs, or 40 lakhs less than the contribution for the current year. The reduction is accounted for by the increase in the net receipt of the current year of 125 lakhs due to the refund to revenue of the Customs Duty. This figure, however, is the net contribution. The gross contribution from commercial lines will amount to 645 lakhs, and we expect to pay into our Railway Reserves 328 lakhs of rupees. If therefore our figures prove correct we shall have in the Railway Reserves at the end of 1925-26 a sum of 738 lakhs of rupees. Now under the terms of the convention these Railway Reserves are to be used (1) to secure the payment of the annual contribution to general revenues; (2) to provide if necessary for arrears of depreciation and for writing down and writing off capital; and (3) to strengthen the financial position of railways in order that the services rendered to the public may be improved and rates reduced. The House will no doubt want to know whether we propose to make any use of our reserves in 1925-26. The answer is no. In the first place our anticipation that at the end of this year we shall be able to place 410 lakhs to Railway Reserves is only an anticipation. Until the actuals of the year are known we shall not know exactly what sum we

have at our disposal in the Reserve Fund. Still less can we say for certain whether we shall realize our hope that at the end of 1925-26 we shall be able to place another 328 lakhs to reserve. Our estimates for next year are based on a normal monsoon and a fair state of trade. If our hopes in this respect are falsified and if the monsoon is a bad one we may be able to place nothing to the reserves. In any case we have to bear in mind that in 1926-27 we have to pay a contribution based on the current year's working of approximately 735 lakhs from the commercial lines. This means that if in that year we make no profits the whole of our estimated reserves will be absorbed in paying the contribution for that one year.

The risk of exchange again has to be borne in mind. A drop in the exchange value of the rupee to 1s. 4d. would increase our Revenue charges by 1¼ crores and all things considered we are satisfied that the prudent course is to make no proposals this year for the utilization of our Reserve Funds. After all a reserve of 410 lakhs is less than 1 per cent of our capital at charge, and it represents only a little more than 4 per cent of our gross earnings in the current year.

THE CAPITAL BUDGET FOR 1925-26.

So far I have dealt only with our Revenue Budget. I propose now to say a few words about our Capital Budget for the current year. The Legislative Assembly approved last March of a capital expenditure of 30 crores during the current year. Approximately 25 crores were for rehabilitation and the improvement of existing lines and 5 crores were for new construction. The actual amount which it is expected to spend during the current year is only 12.85 crores, resulting in a lapse of 17.15 crores. I am prepared to admit at once that the figures are disappointing but they are not quite so disappointing as they look. I have referred already to our windfall in the shape of a refund of the Customs Duty. That windfall amounts in all to 280 lakhs. 125 lakhs go to Revenue and 155 lakhs go towards reduction of the total capital at charge. We anticipate also that there will be a reduction in the capital locked up in stores amounting to 4 crores. That is to say our total capital expenditure in the current year is likely to be 18.4 crores or much the same as last year. Even so the figures indicate a very considerably short spending, but as the causes of this short spending have been analysed at some length in the administration report for last year, I shall not weary the House by travelling over the ground again. I will merely say that we hope to effect a considerable improvement in this matter. Indeed, as I shall show when I come to the Capital Budget for 1925-26, we are counting on this improvement manifesting itself next year.

CAPITAL BUDGET FOR 1924-25.

The Agents have informed us that next year they will be able to spend on works approved by the Railway Board 32 crores of rupees. We attach great importance to the earliest possible completion of approved works, the sooner they are completed the sooner they will begin to pay us a return on our investment but in view of what I have just said, the House will not be surprised when I say that we regard the estimate of the agents as optimistic and that we have some doubts whether they will be able to spend the full amount asked for instead of cutting down the demand; however, we have shown a probable saving of over 9 crores and we are asking the House to vote 6½ crores for new construction and 16.20 crores for open line works. Of the amount asked for 25.7 crores are required for open line works and rolling stock, involving, I may mention, a consequent provision of more than 11 crores from expenditure from the Depreciation Fund. The main purposes to which this money is being devoted are explained in the Budget Memorandum but the House will, I think, be interested if I mention just a few of them. We are providing in terms of 4 wheelers for 3,857 new goods wagons and for 822 new coaching vehicles, 755 of these latter being lower class vehicles. Apart from these additions and betterment to the lower class carriages, which will cost us nearly 1½ crores, we are spending some 30 lakhs on amenities for 3rd class passengers in the shape of waiting sheds, refreshment rooms, booking facilities, water supply arrangements and the like. The Hon'ble Members will no

doubt have read recently in the press of the re-opening of the electrified harbour branch of the Great Indian Peninsula Railway. That constitutes what I am sure will prove to be a landmark in Indian Railway history, for it is the first electric railway in India. We are providing 103 lakhs for the electrification of the Great Indian Peninsula suburban line and 77 lakhs for the electrification of the Bombay-Baroda and Central India suburban line into Bombay. 18 important station yards are being remodelled in order to improve our traffic service and to reduce the delays to wagons in transit at a cost of nearly 3 crores. More than 3 crores are being spent in remodelling workshops, notably at Charbagh on the Oudh and Rohilkhand Railway, at Trichinopoly on the South India Railway, Dohad on the Bombay-Baroda and Central India Railway, and at Perambur on the Madras and Southern Mahratta Railway. 58 lakhs are being spent on doubling certain sections of the Bengal-Nagpur Railway, 38 lakhs have been provided for the doubling of the Grand Chord on the East Indian Railway and 34 lakhs for quadrupling the Bandra, Borivli and Bandra Grant Road sections of the Bombay-Baroda and Central India Railway, and the Bassein Bridges on the same railway are being re-built.

DEMANDS FOR NEW CONSTRUCTION.

Eight and a half crores of rupees are required for new construction. A full list of the lines which are under construction or the construction of which we hope to begin next year will be found in demand No. 7. There are 40 of them with an aggregate mileage of 2,138 miles and a reference to that demand will show that we are embarking on a programme of new construction which will eventually cost more than 44 crores of rupees. It is a large sum of money, but the financial prospects of the various projects have been carefully examined, and we believe that these lines will pay us handsomely. I am confident that the House will thoroughly approve of a bold policy of remunerative railway development. My own conviction is that the best way in which the Government can foster the expansion of Indian trade and Indian industries and thereby increase the wealth and prosperity of India is by extending her railway system. I do not think it can be denied that we are behind hand in this matter. In this great continent, with its 318 million inhabitants, we have only 38,000 miles of railway. Contrast of England with its 50,000 miles and the U. S. A. with its 250,000 miles. If you look at a map of India you see great gaps in which there are no railways. The Raipur-Parvatipur Railway, a railway I may mention in passing the construction of which is dependent on the opening of a harbour at Vizagapatam, will fill in one of these gaps. It will open up a great tract of 125,000 square miles, which at present is entirely without railway communication. Incidentally it will provide the East of the Central Provinces with an outlet to the sea. The Central Coalfields Railway will fill in another gap. Madras has always complained that she has been starved of railway development, and in the South of the Presidency we hope to take up four projects covering some 300 miles of railway, namely, the Villupuram-Trichinopoly, Virudunagar-Tenkasi, Dindigul-Pollachi and Trichinopoly-Karaikudi lines. It is the same with Burma, and we have several lines either under construction or in the programme for that country. I may mention that the Chief Commissioner and Mr. Sim paid a prolonged visit to Burma last December and discussed railway development in Burma with Sir Harcourt Butler and his Government. That is a part of our policy now. The Railway Board, by frequent tours, tries to keep in closest possible touch with the Local Governments in regard to railway matters.

BRANCH AND FEEDER LINES.

What I have just said about our proposals for new construction leads on to a reference to the new policy which we have formulated in consultation with the Central Advisory Council in regard to branch and feeder lines. The House is no doubt aware that 30 years ago when the Government of India themselves were in difficulties for money for new capital expenditure, a system was originated of financing the construction of branch and feeder lines through Branch Line Companies guaranteed by Government. For the encouragement of such companies branch

line terms were drawn up and were kept on tap. These were the terms on which the Government were prepared to give to private companies the money required for the construction of branch or feeder lines. This system undoubtedly enabled lines to be built which otherwise would not have been built, but in other respects it came in for severe criticism from the Acworth Committee, which indeed thought that the aim should be rather to reduce the number of existing private companies than to create new ones. We have recently had the whole subject under our consideration. The existing branch line terms are quite out of date. If they are to serve the purpose for which they were originally intended we should have to revise them on much more liberal lines and with the approval of the Central Advisory Council we do not propose to undertake that revision. We think that the more economical and better course is for us to construct ourselves remunerative new lines. I do not think that the House need fear that this policy will lead to a slowing down of new construction. In the Railway Board we have new projects under constant examination and indeed the capital expenditure on the new projects included in demand No. 7 is four times as great as all the capital raised in the last 30 years by branch line companies. Nor do we propose to neglect projects which though they cannot be classed as remunerative may be required by the Local Governments for administrative or other reasons. We are quite prepared to consider any such project provided that the Local Government is prepared to guarantee it from the provincial revenues. The Local Governments thoroughly approve of this new policy, and we are already constructing two lines on this basis—the Shoranur-Nilambur line in Madras and the Moulmeinye line in Burma. Other projects are under examination.

Before I leave the Budget proper there are one or two special points to which I wish to draw attention. One is that of compensation claims. In 1922-23 the amount paid in compensation claims reached the enormous figure of 121 lakhs, a figure which very naturally attracted unfavourable comment from the Inchcape Committee in 1923-24. We have succeeded in reducing the payments under this head to 78 lakhs. This year we hope that there will be a further fall to 67 lakhs and in 1926-27 we are providing only 47 lakhs. This substantial reduction has been effected by unremitting work on the part of the railway administration and the Railway Board. Improvements in office procedure have enabled the claims to be disposed of more expeditiously. The watch and wards staffs have been strengthened and generally better arrangements have been made to cope with what is a very serious evil.

India's Bill for Coal.

The other matter to which I wish to refer is our Coal Bill. Last year by negotiations in Calcutta the Railway Board managed to secure a revision of the coal contracts which pressed so hardly upon us. We have also been devoting special attention to economy in fuel consumption, and the result is that in spite of very much larger traffic carried in the current year than in 1923-24 we expect our total Coal Bill to be less by 18 lakhs. In 1925-26, in spite again of the further increase of traffic for which we are providing, we hope for a further reduction of 19 lakhs in our expenditure on coal.

Before I sit down there are one or two other matters to which I think the House will wish me to refer in spite of the fact that they are not directly concerned with finance. One, of course, is the question of Indianization. Three statements have been included in the Budget Memorandum giving the number of Indians and Europeans in the gazetted ranks of the Indian Railways and similar statistics for subordinate posts carrying a pay rising to Rs. 250 per mensem and over. These statements show that in the 12 months ending October, 1924, the number of Indians in the superior appointments rose from 280 to 310 and the number of Indian Upper Subordinates from 1,821 to 1,929. On the State Railways other than the E. I. Ry., which we have only just taken over, Indians already filled about 30 per cent of the gazetted posts and though I suppose the Railway Department has the reputation of being the most stiff-necked Department of all in this matter, I doubt whether there are many departments which can show equal results but

what I am concerned with is the future rather than the past. We have accepted the recommendations of the Lee Report that 75 per cent of recruits for the Superior Departments in the Railway service should be recruited in India and what I wish to say is that the provisional proposals of the Railway Board in regard to recruitment and training which have been formulated in order to carry the above recommendation into practical effect are now ready, and I hope to discuss them with the Central Advisory Council before the present session ends. The Hon'ble Members are apt to complain that few Indians have risen to high posts in the railways and none to the Railway Board. That is true, but they must remember that it is only in recent years that Indians have joined the gazetted ranks of railway offices in any number and time must be allowed for them to find their way to the top. The question of subordinate posts is much more difficult. In one sense, of course, it is not a racial question at all. It is rather a communal question. To a very large extent the subordinate railway service is already Indianized in that the posts are largely held by Anglo-Indians. Leaving this point aside the difficulty is this.

INDIANS IN THE RAILWAY SERVICE.

When the railways were first started in India and for many years afterwards Indians did not come forward for work of this kind and the railways got more and more into the habit of relying on the European of the country and the Ango-Indian, it is work for which the Anglo-Indian appears to be specially fitted. Possibly he has acquired a sort of hereditary aptitude for it. At any rate he has made good. The railway authorities are accustomed to him and like to employ him in subordinate railway appointments. Now there is a change. Indians wish also to be employed in these appointments and they complain that they are up against vested interests and that the subordinate railway employ is so to speak the close preserve of the Anglo-Indians. The complaint, I think, is specially directed towards the Subordinate Traffic Department, and indeed it is a noticeable fact that at all important stations almost every railway official in a position of authority that one sees is a European or an Anglo-Indian. Now all I can say on this problem is that it is impossible to make any immediate drastic change. I am not prepared to say that Anglo-Indians or Europeans who are working well should lose their jobs or their promotion in order to make way for Indians, but what I do say is that the Indian should have his chance. If the Indian of the requisite education is prepared to go through the drudgery, the hard work and the irregular hours which are a pre-requisite to promotion to the better posts in the Subordinate Traffic Service, then he should get the chance of doing so, and if he proves himself fit for promotion he then should get this promotion. I consider it is the only possible policy, and it is with this policy in view that we are starting a training school on the 1st of March at Chandausi. One of the functions of this school will be to train subordinates particularly for the Transportation Department.

RAILWAY MATERIALS IN INDIA.

Another important question to which the House attaches great importance is the extent to which railway materials are obtained in India. In the report by the Railway Board on Indian Railways for 1923-24 the matter is discussed at length and the purchases of materials are analysed in detail under each head. From the detailed explanations there given it will be seen that orders have been placed in India wherever possible and that it has only been in cases where it was found impossible to obtain the materials in India at a reasonable price that the orders have gone abroad. In the supply of rails, for example, orders were placed in this country which were greater than the Tata Iron and Steel Company were able to comply with. In the current year two important developments in this matter have taken place. Owing to the adoption by the Assembly of the recommendations of the Tariff Board for the grant of bounties to the wagon building industry we have been able to place orders for the supply of wagons up to the full capacity of the firms in India engaged in the industry. It has also been decided, with the concurrence of the Central Advisory Council, to obtain the services of a timber expert from the Forest Department in order to enable the railways to make full use of

the supply of Indian timbers not only for sleepers, but for other purposes, such as body work in coaching stock. I think we can confidently challenge any one to show that orders have gone abroad which could reasonably have been placed in India.

QUESTION OF PASSENGER FARES.

Another question in which the House, I know, takes a great interest is that of passenger fares and I believe that there is a certain soreness that whereas some reductions have been made in Upper Class Fares, the Third Class fares have remained untouched. I should just like to explain the railway point of view. We apply the practical railway criterion, can the traffic bear the rate? Now I would ask the House to apply this maxim to the problem as I shall put it before them. The following are the relevant statistics in regard to 1st Class passengers:—1921-22, number 1,163,000; earnings 138 lakhs; 1922-23, number 918,000; earnings 139 lakhs; 1923-24, number 817,000; earnings 129 lakhs.

It will be seen that we lost not only in passengers but in earnings. That is why some railways judged it necessary to reduce the 1st Class fares. Take again the 2nd Class passengers. Here are the figures: 1921-22, number 6,549,000; earnings 228 lakhs; 1922-23, number 5,134,000; earnings 211 lakhs; 1923-24, number 4,538,000; earnings 195 lakhs.

Here again there was a progressive decline both in passengers and earnings and again a number of railways found it necessary to reduce the fares. The Third Class statistics tell a different story:

1921-22, 491,000,000; earnings 2,841 lakhs.
1922-23, 503,000,000; earnings 3,220 lakhs.
1923-24, 513,000,000; earnings 3,291 lakhs.

It will be seen that there was a progressive increase both in passengers and earnings. The annual rate of increase perhaps is slower than it was before the war and it might be argued that a reduction in fares would pay us by the increase of passengers it would bring us, but in the first place we should be taking risks if there were no increase of passenger traffic. Even a reduction of half a pie per mile in the 3rd Class fares would cost us 4½ crores a year. Secondly, even assuming that there were a large increase in the passenger traffic it is certain that we should not have sufficient coaching stock to carry the increased traffic. I have already said that we are providing in the Budget in the terms of four wheelers for 755 new Third Class carriages. The provision we have made is limited by the capacity of our workshops, and we propose to consider whether we cannot adopt other measures which will enable us to put more coaching stock on the lines. That, I think, is all I can usefully say on the subject at present. It is a question which we have under constant examination.

CONCLUDING REMARKS.

I am afraid that I have already wearied the House and I will bring my speech to a close. The year which is now ending has been marked by many important events. Two of these indeed are of outstanding importance, namely, the making over the East Indian Railway and the separation of Railway Finance from General Finance, but the real importance of the year in my opinion lies in the evidence it affords of a real advance towards the live efficient business managenent of the Indian Railways. Some one said the other day in the Central Advisory Council that there was a new spirit abroad in the Railway Board. I believe that remark to be true, and if it is true the credit rests with two men, Mr. Hindley and Mr. Sim, but, Sir, it is not only in the Railway Board that that new spirit is abroad, and we who are ultimately responsible to the House for the management of the Indian Railway system know how much we are indebted for the loyal co-operation and unremitting work to the Railway Agents and the Railway Officers and men throughout India.

The Railway Estimates.

SOME FACTS AND FIGURES.

The following are the principal figures in the railway estimates which the Hon'ble Sir Charles Innes, Railway Member, presented to the Legislative Assembly:

Accounts for 1923-24.

	Rs.
Gross Traffic Receipts ..	9,28,733,000
Share of Subsidized Companies Profits	2,364,000
Interest on Fund Balances ..	Nil.
Miscellaneous Receipts ..	704,000
Total Receipts ..	9,31,801,000
Working Expenses ..	5,91,560,000
Surplus Profits paid to Indian States and Railway Companies	11,446,000
Interest Charges ..	2,27,674,000
Miscellaneous Charges ..	2,080,000
Total Charges	8,32,760,000
Profit from Commercial Lines	99,041,000

Revised Estimate for 1924-25.

Gross Traffic Receipts ..	9,76,500,000
Share of Subsidized Companies Profits	2,950,000
Interest on Fund Balances ..	Nil.
Miscellaneous Receipts ..	662,000
Total Receipts	9,80,112,000
Working Expenses ..	6,20,075,000
Surplus Profits paid to Indian States and Railway Companies	14,900,000
Interest Charges ..	2,29,959,000
Miscellaneous Charges ..	2,720,000
Total Charges	8,67,654,000
Profit from Commercial Lines	1,12,458,000

Budget Estimate for 1925-26.

Gross Traffic Receipts	10,06,500,000
Share of Subsidized Companies Profits ..	3,077,000
Interest on Fund Balances ..	3,235,000
Miscellaneous Receipts ..	644,000
Total Receipts	10,13,456,000
Working Expenses ..	6,57,937,000
Surplus Profits paid to Indian States and Railway Companies	13,350,000
Interest Charges ..	2,38,182,000
Miscellaneous Charges ..	3,430,000
Total Charges	9,12,899,000
Profit from Commercial Lines	1,00,557,000

In accordance with the terms on which Railway Finances were separated from General Finances, the contribution from Railway to General Revenues in both 1924-25 and 1925-26 is based on the results of the year 1923-24. It amounts in both years to a sum of Rs. 6,30,42,000 gross (of which Rs. 5,40,42,000 represents one per cent of the capital at charge of Commercial Lines and Rs. 90,00,000 one-fifth of the surplus in 1923-24) and to a sum of Rs. 5,09,52,000 net, after deducting the loss on strategic lines, borne by railway revenues in 1923-24, the loss on strategic lines is estimated at Rs. 1,50,58,000 in 1924-25 and Rs. 1,53,40,000 in 1925-26 and the final results of the estimates is therefore as follows :—

Budget Estimate for 1924-25.

	Rs.
Profit from Commercial Lines	1,12,458,000
Deduct (1) Contribution to General Revenues ..	50,952,000
(2) Loss on Strategic Lines	15,058,000
Surplus	46,448,000

Revised Estimate for 1925-26.

Profit from Commercial Lines	1,00,557,000
Deduct (1) Contribution to General Revenues ..	50,952,000
(2) Loss on Strategic Lines	15,340,000
Surplus	34,265,000

One-third of the excess of the surplus over three crores in each year or Rs. 54,83,000 in 1924-25 and Rs. 14,22,000 in 1925-26 also goes to general revenues, under the terms on which railway finances were separated, making the total amounts expected to accrue to general revenues from the railways Rs. 56,435,000 in 1924-25 and Rs. 52,374,000 in 1925-26, the balances of Rs. 40,965,000 in 1924-25 and Rs. 32,843,000 in 1925-26 are placed to the Railway Reserve.

In 1924-25, owing to the floods in Southern India during the summer and in parts of Northern India during the autumn, the railways lost about three-quarters of a crore, either by a reduction in their receipts or an increase in their expenditure on repairs, but in other respects they have had a very good year. The gross receipts on commercial lines in 1924-25 are now estimated at Rs. 9,77,162,000 or Rs. 47,725,000 more than in 1923-24. On the whole, there has been no more than a normal expansion of passenger traffic but with excellent crops

in most parts of India and better trade conditions generally the railways have been called upon to move a much larger volume of goods traffic, especially in coal, jute and food grains.

In the first eight months of the year, the East Indian Railway (with the Oudh and Rohilkhand Railway) and the Bengal-Nagpur Railway succeeded in carrying over $1\frac{3}{4}$ million tons more coal, than in the corresponding period of 1923-24.

COMMERCIAL LINES.

The working expenses of commercial lines are expected to amount to Rs. 62,075,000 or about 285 lakhs more than in 1923-24. Owing to a decision of the Bombay High Court, upheld by the Privy Council, that Customs Duty was not leviable on stores imported by companies lines prior to April 1st, 1924, a refund of about a crore and a quarter (out of a total refund of some 280 lakhs) is expected, in reduction of the working expenses, but with the separation of the railway from general finances, it has been possible to constitute a Depreciation Fund and set aside the correct amount representing the depreciation of the year, which, on commercial lines, is about $2\frac{3}{4}$ crores in excess of the expenditure on replacements and renewals in 1923-24, and in addition over a quarter of a crore more than last year has been spent on the repairs and maintenance of railway lines and their equipment, apart from the repairs of flood damages. In spite of increased traffic, there is a small decrease in the cost of fuel, owing to a revision of the coal contracts of various railways and the lower price which now obtains for coal, and it is expected that about $11\frac{1}{2}$ lakhs less than last year will be needed for payments in compensation for lost and damaged goods.

1925-26 : With prospects at present promising, the gross traffic receipts of commercial lines next year, are estimated at Rs. 10,07,144,000 or about three crores more than in the current year. The working expenses of commercial lines are put at Rs. 65,793,700 or about $3\frac{3}{4}$ crores more than in the current year, of which a crore and a quarter is due to the absence of this year's refund of customs duty.

Special allotments of Rs. 70 lakhs are made for the commencement of the scheme for introducing automatic couplers from which important economies are anticipated, of Rs. 50 lakhs for speeding up repairs to rolling stock and of another Rs. 50 lakhs for writing down the value of stores to the present market levels and thus facilitating their disposal. Though a considerable increase of traffic is anticipated, the cost of fuel is, owing to the lower price placed at a figure Rs. 19 lakhs below that of this year, it is also hoped that about Rs. 20 lakhs less will be required in compensation for lost and damaged goods.

It is to be remarked that in spite of the special allotments aggregating Rs. 170 lakhs, which have been made for improving the equipment of the line, the anticipated profit from commercial lines in 1925-26 would be about the same as in 1924-25, but for the refund of customs duty in the earlier year.

CAPITAL EXPENDITURE.

The net capital outlay of the Railways in India in 1924-25 is now estimated at Rs. 12.85 crores but the total capital expenditure of the year is expected to be considerably greater, since the outlay is reduced to the extent of Rs. 155 lakhs, by the refund of customs duty, of which mention has already been made and a reduction of Rs. 4 crores is also expected, in the capital locked up in stores balances. The estimated total capital expenditure of the year is therefore Rs. 18.4 crores, a figure approximating to the expenditure of last year.

Next year a further reduction of $1\frac{1}{2}$ crores in stores balances is anticipated, and an additional capital expenditure of Rs. 23 crores is proposed, over $6\frac{1}{2}$ crores of which are for the construction of new lines. The programme in this direction provides for the ultimate addition of over 2,000 miles of line, of which 348 miles will be opened in 1925-26.

Of the new projects, that for connecting Raipur with Vizagapatam by a railway 260 miles in length to Parvatipur, is the most important and it is hoped to undertake it at an estimated cost of 536 lakhs.

Is There a Cure for Leprosy?

By Dr. Edwin Muir.

There has been much discussion lately in the public press as to whether there is a 'cure' for leprosy, some asserting that there is and others denying it.

There is no specific which will cure every case, but there is a treatment which, if carried out thoroughly well in early cases, cause the disappearance of all signs of the disease, and the patient may have a reasonable assurance that, provided he leads an active healthy life and keeps free from other diseases which would weaken him, he will never see any signs of leprosy on his body again. This holds good for early cases, but the more the disease advances the more difficult it is to get rid of it.

So that though there is no specific which will cure every case there is a means of checking the disease in its earliest stage, that is, at the time when it may be first easily recognized by any doctor of intelligence who has been instructed regarding the disease. If every person suffering from early leprosy were to go to a doctor who could diagnose the disease and be treated by him thoroughly according to the latest methods, the disease would disappear from India and from the world within a generation. But there are difficulties in the way of this which will prevent such a rapid disappearance.

1. The first is the ignorance of the doctors about leprosy. Many doctors holding high positions in this country are unable to diagnose the disease from its early signs, or to treat it efficiently when once it is diagnosed.

2. The second is the ignorance of the people and the fact that first signs do not as a rule cause pain or inconvenience to the patient; so that he supposes he is suffering from some trivial ailment and does not seek the advice of the doctor.

(3) The third difficulty is the prejudice prevalent regarding leprosy which is supposed to be a sign of the Gods or to be hereditary instead of being what it really is, a disease caused by a small organism growing in the skin and nerves of body.

This wrong conception does great injustice to the unfortunate people who are known to be suffering from leprosy, causing them to lose their employment, to be outcasted and despised by their fellowmen even though the disease may be in its earliest stage and be no more in appearance than a small patch of ringworm and a good deal less contagious than ringworm. In its *very* earliest stage there is absolutely no danger as far we are aware of the patient transmitting his disease to anyone else.

This prejudice however in the minds of the public leads to (4) shame in the mind of the patient which prompts him to hide the presence of the disease as long as possible and when he can hide it no longer it is too late to treat it with any hope of rapid recovery.

These three factors—ignorance, prejudice and shame—are the principal allies of leprosy which prevent its being driven out of the country by early diagnosis and early treatment. If we can remove these three it will not take long to stamp it out.

In the middle ages leprosy was as common in England as it is in India to-day, but about 300 *years ago it gradually disappeared as an endemic disease.* There was no specific to stamp leprosy out of England, *its disappearance was due to the improved general conditions* of life—better food, better sanitation, better houses.

The climatic conditions in India are less favourable than those in England, but the probability is that in spite of this the disease is not increasing as far as we can judge. Neither is it diminishing. This means that on an average every leper in one generation infects one healthy person in the next generation, though doubtless some lepers infect a great many more than one and others again do not infect any at all.

If this be so—if leprosy be helped by its allies (ignorance, prejudice and shame) is just managing to hold its own—then what would be the result if these three allies were gradually removed. Surely we could expect that within a few generations the disease would entirely cease to exist.

The External Capital Committee.

The Bengal Chamber was invited by the External Capital Committee to submit a series of replies to the questions circulated by the Committee; and these questions, together with the answers framed by the Committee of the Chamber, in consultation with their Finance Sub-Committee, are printed below:—

(1) *What are the different forms in which external capital enters India?*

It is presumed by the Chamber that the object of this question is to obtain information as to the various monetary forms in which external capital enters India. In other words, what is asked for is a statement of the various classes of investments made by persons, who are not of Indian domicile, in property of any description in this country. The Committee of the Chamber enumerate these classes as follows:—(*a*) Government loans; (*b*) Municipal and other public loans; (*c*) investments in sterling joint-stock companies domiciled in India and in rupee joint-stock companies; and (*d*) investments in partnerships and all similar ventures of every description other than joint-stock companies.

(2) *In which of these classes is the entry either unobjectionable or necessary in the interests of India generally and of Indian industries in particular?*

It is the opinion of the Committee of the Chamber that the entry of external capital into India is unobjectionable, and that in the present stage of the development of Indian industries it is essential. The point was well brought out by the late Professor Alfred Marshall in his evidence before the Indian Currency Committee of 1899. In reply to a question as to whether foreign capital was or was not beneficial to India Professor Marshall said: "I hold in the most clear and, if I may say so, confident manner that there never was a country which needed foreign capital more than India does. It needs foreign capital partly to enable India to throw aside those mediæval methods of production which still prevail in many branches of industry, to develop means of intercommunication in all directions, and partly to educate the natives themselves to store up capital. When the natives have once got to see that the foundation of a surplus of income over expenditure is to be devoted to making the future happier then, I think their own capital will grow, and India may be able to move fast ahead somewhat as Japan has been going lately with less dependence on foreign aid. But a check to the use of western capital in India at the present stage would seem to me to be the greatest calamity that could happen to her." The Committee of the Chamber are of the opinion that these words are as true to-day as they were in 1899; and that for the reasons stated by Professor Marshall the entry of all forms of external capital is unobjectionable.

(3) *Is it necessary to encourage the entry of any particular variety?*

As will be inferred from the answer to question 2 the Committee of the Chamber would encourage the entry of all forms of capital for productive and industrial purposes.

(4) *If so, what steps should be taken in this direction and to what extent is capital likely to be forthcoming as the result of such steps?*

The entry of external capital will be, the Committee believe, encouraged by any steps that are calculated to increase and to retain the confidence of investors. They have in mind measures such as the establishment and maintenance of stability in the currency and exchange system of the country, and in its political and administrative conditions. They can give no indication of the extent to which capital would be likely to be forthcoming as the result of such steps.

(5) *How far is it possible to replace external by internal capital?*

Unless internal capital is available more cheaply than external capital it will not replace the latter; and the Committee are not in a position to give an opinion as to how far replacement is possible. Their

experience leads them to the conclusion that it will be difficult for many years to obtain sufficient internal capital to maintain the development of Indian industries, and that it will be still more difficult to replace the external capital already invested in those industries.

(6) *What measures are necessary for the—*

(i) Greater attraction of indigenous capital for industrial purposes; and

(ii) Developing of banking organization and credit facilities in India?

With reference to (i), the Committee of the Chamber favour any reasonable measures which would have the effect of encouraging Indians, perhaps particularly those of small means, to invest their savings instead of hoarding them. For instance considerable success in this direction was attained when the Government of India encouraged the formation of branch line railway companies by private enterprise with rupee capital. The habit thus acquired will encourage Indian capital to seek industrial investment; and this tendency will be the more pronounced as the Indian public acquire confidence in those who promote and manage industrial undertakings. As this confidence is acquired so the public may be expected to develop habits of thrift, and to invest their savings in industrial ventures.

The Committee do not feel that they can offer any useful suggestions in regard to the development of banking organization and credit facilities.

(7) *What are the forms of external capital the entry of which is objectionable?*

(8) *What are the objections in each such case?*

(9) *What restrictions can and should be imposed in each such case?*

As will be clear from their answers to the preceding questions the Committee of the Chamber do not regard any form of external capital as being objectionable; and they would not therefore impose any restrictions upon its entry.

(10) *What would be the effect of any such restriction on the—*

(i) Industries and development of the country generally,

(ii) Loan policy of Governments and local bodies, and

(iii) Holders of investments?

It is the opinion of the Committee of the Chamber that any such restrictions would tend to retard the development of the country generally and to increase the cost of capital. For example, the Government and other public authorities might be required, under the influence of such restrictions, to pay more for their loans. And the holders of investments might be affected if the restriction took such a form as would limit the market for shares.

(11) *Is it necessary to differentiate in any respect and, if so, how would you differentiate between:—*

(i) British and foreign capital, and

(ii) Capital from foreign countries which exercise discrimination and from those which do not?

Subject to any restrictions which might result from the course of Imperial policy the Committee of the Chamber would make no differentiation as between British and foreign capital.

(12) *What is the practice in other countries (especially in the British Dominions) in the matter of encouraging or restricting the flow of foreign capital?*

The Committee are without information in this connection but they have made a reference, in regard to Canada, to the Canadian Government Trade Commissioner in Calcutta, who has stated as follows:—

"In reply to your enquiry regarding the entry of British or Foreign capital into Canada, I might answer that the Federal Government, the Provincial Governments and Municipalities of Canada are continually making every effort to encourage the entry of both American and British capital into the country.

I am sending you under separate cover two publications which will serve to illustrate the methods of propaganda adopted by the

(*Concluded on page* 135.)

Indian Mineral Production in 1923.

The Report on the Mineral Production of India during 1923, by Mr. E. H. Pascoe, M.A., Sc.D. (Cantab.), D.Sc. (London), F.G.S., F.A.S.B., Director, Geological Survey of India is, as usual, a full record of the activities of the year. They may be set down under appropriate heads :—

Mineral Concessions Granted.—The number of mineral concessions granted during the year amounted to 624 against 672 in the preceding year ; of these one was an exploring license, 513 were prospecting licenses and 110 were mining leases.

Chromite.—There was a very large increase in the production of chromite which rose from about 22,800 tons in 1922 to over 54,200 tons in the year under review. This increase was mainly due to greater mining activity in the Mysore State.

Coal.—There was an increase during the year of some 646,800 tons, or about 3.4 per cent, in the output* of coal. This increase was due chiefly to Bihar and Orissa and Bengal, but Hyderabad and Central India also contributed. The Central Provinces showed a decrease of nearly 19 per cent, and the output from Assam and Baluchistan were also considerably reduced ; the Punjab showed a slight decrease. The increase in Bihar and Orissa was due to the two great fields of Jharia and Raniganj, to the recovery of the Giridih field and to the steady expansion of Bokaro. The maiden effort of the Talcher seams, which have been referred to in previous reviews, amounted to some 4,800 tons. The Sasti field of Hyderabad again shows a considerable decline which, however, is more than balanced by the partial recovery of the Singareni field. The Sohagpur field of Central India nearly doubled its production, but Umaria continued its decline. Ballarpur and the Pench valley were chiefly responsible for the serious drop in the Central Provinces output. The new Loi-an coalfield of Burma, which is of Gondwana and not of Tertiary age as formerly supposed, has made strides during the year and increased its output from 172 tons in 1922 to just over 2,000 tons in 1923.

The pit's mouth value of coal decreased in some areas and increased in others. In Burma it increased another Rs. 5 or so, as it had done the previous year, and the rate in Baluchistan rose nearly Rs. 1-7. In the Punjab the drop in value amounted to Rs. 4-14, in the Central Provinces to Re. 1 and in Rajputana to Re. 0-4-5. Bengal and Bihar and Orissa both show an average decrease, the presidency of Re. 0-8-4 and the province of Re. 0-1-10.

The yield of the Makum field of Assam decreased practically to its figure for 1921 ; both Baluchistan fields showed heavy decreases also. Rajputana produced less than half what it did the previous year, and the total from the Punjab shows a decrease.

The export statistics show an increase of nearly 59,500 tons, while the imports of coal and coke on the other hand fell to practically half what they totalled in 1922. Over two-fifths of the imports came from South Africa whose contribution increased by over 38,000 tons. Australia and "other countries" are the only other sources whose contributions show an increase. From the United Kingdom imports fell from 718,500 to only 125,300 tons ; from Japan India received a paltry 4,600 tons instead of 55,500 tons in the previous year.

The average number of persons employed daily in the coalfields during the year remained practically the same as it was in 1922, while the average output per person employed showed a slight improvement, rising from 94.6 tons in 1922 to 97.8 tons during the year under report ; in 1919 this figure was 111.05 tons.

Copper.—Since 1919, following the commencement of smelting operations at the Rakha mines during the year, 1918, the output of copper-ore in Singhbhum has been maintained with a fairly steady level till 1923. The decrease in the output of ore during that year was heavy, the amount totalling 6,500 tons only, valued at Rs 65,500 (£4,367).

* The total production of coal in India during the year 1923 amounted to 19,657,778 tons as compared with 19,010,986 tons in the preceding year.

This amount of the ore was obtained by the Cape Copper Company during the first quarter of the year, and from the 1st of April the works were closed down and pumping alone carried on. The amount of refined copper extracted from the ore amounted to 187.23 tons. The Rakha mines deposit is a low-grade sulphide ore containing two to four per cent of copper, but a slightly improved grade of ore has recently been struck. Three other companies are prospecting in the Singhbhum belt, and one of these, the Cordoba Copper Company, has met with very promising ore-bodies in their Mosaboni mines. A zone of secondary enrichment, in which malachite and cuprite predominated, was pierced and an impoverished zone with practically no ore encountered beneath. The lode channel was, however, well defined, and beneath the impoverished zone chal-copyrite began to make its appearance in small lenses. At a vertical depth of 169 feet from the surface tunnels driven along the lode proved the presence of solid chal-copyrite, in some places 2 feet wide, over a considerable distance in length, and giving values varying between 10 per cent and 25 per cent of copper. Some very lucrative ore has been opened up by means of shafts sunk on this lode and there is every promise of an improvement in the outlook of copper production from this part of India.

The production of copper-ore in the State of Mysore during 1923 was *nil.*

Diamonds.—The output of diamonds from Central India amounted to 115.22 carats, valued at Rs. 46,495 (£3,100), as against 171.39 carats, valued at Rs. 91,648 (£6,110), in the preceding year.

Gold.—The total output of gold during the year under review fell to 422,306.56 oz. valued at £1,702,642. The increase shown in the figures for 1922, which were 438,015.04 oz. valued at £1,857,577, was almost entirely a result of the treatment of accumulated cyanide slags; the amount of gold from these slags amounted to 3,172 oz. for that year, and during the year under review to over 1,000 oz.

Iron.—The production of iron-ore increased by 28.6 per cent, *viz.*, from 625,274 tons in 1922 to 804,384 tons in 1923. The raisings in Mayurbhanj (Bihar and Orissa) amounted to 507,225 tons (production by the Tata Iron and Steel Company, Ltd.), but the total ore despatched from there was 663,247 tons, the excess over production being taken from the balance of raisings in the year previous to 1922, which could not be despatched owing to the incompletion of railway sidings and consequently remained in stock. The production in Singhbhum is mostly that of the Bengal Iron Company, the Indian Iron and Steel Company being responsible for 9,909 tons from their mining at Gua. The Amda-Jamda railway extension to Gua has now been opened and the despatch of ore from that locality to the Indian Iron and Steel Company's blast furnaces at Hirapur commenced; previously these furnaces had been supplied with ore from Mayurbhanj State and the Central Provinces.

The Tata Iron and Steel Company produced 392,135 tons of pig iron, 151,097 tons of steel, including rails, and 3,506 tons of ferro-manganese, showing a decided increase in each case over the previous year. The Bengal Iron Company produced 119,669 tons of pig iron and 41,849 tons of iron castings, also showing substantial increases in the two cases. The Indian Iron and Steel Company commenced turning out pig iron, railway sleepers and railway "chairs" in November, 1922; their production of pig iron during 1923 amounted to 77,980 tons.

In the Central Provinces the number of indigenous furnaces in operation fell from 148 in 1922 to 119 in 1923, the decrease being mainly in the Bilaspur district. The output of iron ore in Burma is by the Burma Corporation, Limited, and is used as a flux in lead-smelting.

Jadeite.—The output of jadeite in Burma, which in 1922 was more than double that of the previous year, fell to below the 1921 figure during the year under review. In other words the output of 7,724.7 cwts. valued at Rs. 8,69,340 (£57,956) for 1922, fell to 3,626.6 cwts. valued at Rs. 8,20,120 (£54,675) during 1923. It will be noticed that although the quantity of jadeite extracted decreased so markedly, there was

very little corresponding fall in the total value : this is due to the higher quality of jadeite met with.

The export figures, from which a better idea of the extent of the jadeite industry is obtainable, for the year 1922-23 were 5,762 cwts. valued at Rs. 18,72,168 (£124,811) sinking to 3,088 cwts. valued at Rs. 8,37,052 (£55,803).

Lead.—There was a further increase of about 74,000 tons in the production of lead-ore at the Bawdwin mines, and the total amount of metal extracted increased from 39,214 tons valued at Rs. 1,41,71,392 (£944,759) in 1922 to 46,060 tons valued at Rs. 1,68,18,111 (£1,121,207) in 1923. The quantity of silver extracted rose from 4,205,584 oz. valued at Rs. 1,00,39,362 (£669,291) to 4,843,939 oz. valued at Rs. 1,01;16,985 (£674,466). The value of the lead extracted increased from Rs. 361 (£24.1) per ton in 1922 to Rs. 365 (£24.4) per ton in the year under review, and that of silver decreased from Rs. 2-6-2 (38.2*d.*) to Rs. 2-1-5 (33.4*d.*) per oz.

A new feature has developed during the opening up of the Shan Lode to the north. High grade silver-copper ore has been developed aggregating 335,681 tons, averaging 11.1 per cent copper and 23 oz. silver per ton. Tetrahedrite has been found on No. 5 Level of the Shan Lode, assaying silver 579 oz., lead, trace, zinc, 2.9 per cent, copper 26.5 per cent.

Magnesite.—The revival of the magnesite industry in 1921 has maintained itself ever since. The figures for 1922, 19,273 tons valued at Rs. 2,40,692 (£16,046), have been exceeded slightly by those for 1923 which are 19,436 tons valued at Rs. 2,34,332 (£15,622).

Manganese.—The output of manganese ore in India rose from 474,401 tons valued at £915,428 f. o. b. at Indian ports, in the previous year, to 695,055 tons valued at £2,215,984 f.o.b. at Indian ports during 1923. The localities chiefly responsible for this increase were most of the areas in the Central Provinces, Vizagapatam and Sandur State in Madras, Shimoga in Mysore and Gangpur in Bihar and Orissa ; each of the two fields of Bombay showed an appreciable decrease. As in many other mineral industries that of manganese is apt to fluctuate with agricultural conditions. A good harvest will absorb the attention of labour and thus adversely affect the output of a mineral deposit ; conversely mineral industries usually reap the benefit of a bad monsoon.

The excess of exports over production, which amounted to about 400,000 tons in 1922, has continued during 1923 to the extent of 155,000 tons, and is evidently a result of previous accumulation of stocks. The total exports from British Indian ports increased by about 1,000 tons. The enormous increase of over 150,000 tons to the United Kingdom during 1922 has been repeated during 1923 to the extent of some 83,400 tons. France, America, Italy and Japan all took considerably more than they did in 1922, while Belgium, Holland and Germany absorbed less. In the case of Belgium, which transmits a portion of her imports to Germany, the decrease amounted to no less than 141,600 tons.

Mica.—There was an increase of about 1,980 cwts. in the declared output of mica in 1923 above that of the previous year. As has been frequently pointed out, the output figures are incomplete, and a better idea of the size of the industry is obtained from the export figures. The exports of mica during 1923 amounted, in fact, to more than double the declared output, equalling 83,296 cwts., valued at Rs. 80,76,522 £538,435) ; this figure is not far short of double that for the previous year 1922, which was 43,145 cwts., valued at Rs. 57,85,245 (£385,683). It will be noticed, however, that the average price of the mica fell from Rs. 134 (£8.9) to Rs. 97 (£6.5) per cwt.

Monazite.—There was a recovery in the output of monazite in Travancore, which rose from 125 tons, valued at £1,871 in 1922 to 246.3 tons, valued at £3,697, in the year under review, but the amount is still very far short of the 1,260 tons obtained during 1921 and valued at nearly £31,000.

Petroleum.—The statistics of petroleum show that it is becoming more and more difficult to maintain the output of India (including Burma) at the high level it reached in 1919 and 1921, which amounted to well

over 305½ million gallons. During the year under consideration the total production amounted to nearly 294¼ million gallons against 298½ million gallons in 1922; for this decrease the two largest fields of Burma, Yenangyaung and Singu were mostly responsible.

The Yenangyat field is rapidly dying, and its yield is now less than that for Thayetmyo. As in the previous year the Singu and Yenangyaung oilfields again show a decided decrease, the outputs falling by 4 3/5 million gallons and 4½ million gallons, respectively. Thayetmyo and Badarpur contributed, to much the same extent in each case, to the general deficit; the latter field is a disappointment and shows no promise of making any substantial contribution to India's output of petroleum. Against these declines are to be recorded an increase in the Digboi field of over 2 million gallons and a gratifying increase of nearly 4½ million gallons in the Punjab. Minbu and the Upper Chindwin more or less maintained their level.

The utilization of the shallow oil-sands of the Yenangyaung field which were shut off during the competitive rush for the richer deep sands, continues; several remunerative wells are now being worked at depths a little above or below 400 feet. The electrification of this field has extended itself and more than 700 wells are now being either pumped or drilled, by electricity. The Indo-Burma Oilfields, Ltd., have now ceased operations in the Yenangyaung field.

During the year active prospecting was continued in the Punjab, Assam and Burma, by a variety of oil interests.

In the Punjab the oil industry entered on a new phase with the completion at Rawalpindi, and the opening in February, 1922, of the refinery erected by the Attock Oil Company to deal with the production of the Khaur oilfield in the Attock district. The refinery has a daily capacity of 65,000 gallons of crude oil, but the average throughout has not yet reached the maximum. The test wells in the Dhulian and Gabbir areas reached the depths of 2,800 feet and 1,760 feet, respectively, without striking oil in remunerative quantity; both wells have been abandoned but a fresh test at Dhulian has already been started.

The increase in the imports of kerosene oil reported during the previous year continued to almost the same extent during the year under review, amounting to over 10 million gallons, the increase being shared by all countries concerned.

During 1923 the export* of paraffin wax again decreased by over 3,000 tons.

Ruby, Sapphire and Spinel.—There was a decrease in the output of the Mogok ruby mines in 1923, bringing the figure below what it was in 1921. The total weight, however, has little meaning in the case of precious stones, and in spite of the marked decrease in this figure, for which sapphires were mostly responsible, the value actually increased; this is accounted for by the greater value of the rubies and the spinels.

Salt.—There was again an increase in the production† of salt during 1923 over that of the preceding year, amounting to over 127,000 tons, for which Bombay and Sind were more than responsible. The increase in Madras of some 20,000 tons was balanced by a deficit to the same approximate extent in Northern India. Aden showed a fall of nearly 35,000 tons.

Against the above increase there was a severe deficit in the output of rock-salt amounting to some 87,600 tons. The imports of salt remained very steady, showing an increase of scarcely more than 1,600 tons.

Saltpetre.—There was a further decrease of over 3,000 tons in the total output of saltpetre. Bihar and the Punjab were mainly responsible for this decrease where the outputs fell by 21 per cent and 39 per cent, respectively. The total Indian production amounted to 8,555.4‡ tons valued at Rs. 22,46,355 (£149,757) against 11,672.9 tons valued at Rs. 35,22,995 (£234,866) in 1922. Exports also decreased

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* 24,554 tons of paraffin wax were exported from India in 1923.

† The total production of salt in India during 1923 was 1,781,155.9 tons as compared with 1,653,898.2 tons in the preceding year.

‡ It has been discovered that Calcutta and Madras have been producing saltpetre for some years past. The amount produced in Calcutta in 1923 was 22.6 tons, and in Madras 138.1 tons.

from 11,000 tons in 1922 to 8,000 tons in the year under consideration, the decreases being shared by all the recipient countries except Mauritius and its Dependencies.

Silver.—There was a further increase in the output of silver from Bawdwin, amounting to some 638,350 oz. The production from the Kolar gold mines on the other hand amounted to half that of the previous year. The yield from the Anantapur gold mines fell from 554 oz. in 1922 to only 103 oz. in 1923. The total Indian production was 4,863,066 oz. valued at Rs. 1,01,58,102 (£677,207).

Tin-Ore.—There was again a small increase in the production of tin-ore amounting to 121 tons. The total production of 1,996 tons was derived from Burma, Tavoy contributing 73.8 per cent, and Mergui 25.9 per cent. No block tin seems to have been produced by Mergui. Imports of unwrought tin increased considerably from 34,459 cwts. in 1922 to 48,342 cwts. in 1923 ; 90.7 per cent of these imports came from the Straits Settlements.

Tungsten.—The production of wolfram decreased slightly from 943 tons valued at Rs. 3,75,532 (£25,035) during the previous year, to 872 tons valued at Rs. 4,79,693 (£31,979) in 1923. The decrease in output was, however, accompanied by a considerable increase in total value, amounting to £6,944. Practically the whole of the output was derived from the Tavoy district. Recent experiments have found a use for tungsten carbide as a substitute for the "bort" used in the crowns of core-drills. The carbide is said to have a hardness very little inferior to "bort", and to be cheaper. As the price of "bort" is between £10 and £12 a carat, the substitution of tungsten carbide may add a much needed impetus to the wolfram-mining industry.

Zinc.—2,062 tons of zinc-ore were exported during the year 1923 against 18,061 tons in the preceding year. The ore is found in association with galena in the Bawdwin mines leased by the Burma Corporation, Limited.

Alum.—The production of alum in the Mianwali district of the Punjab decreased by 48 per cent. The output amounted to 3,456 cwts. valued at Rs. 64,472 (£4,298) in 1923 as against 6,632 cwts. valued at Rs. 99,760 (£6,651) in 1922.

Amber.—The production of amber in Burma rose from 3.6 cwts. valued at Rs. 1,960 (£131) in 1922 to 47.9 cwts. valued at Rs. 13,720 (£915) in the year under review.

Apatite.—An output of 1,082 tons of apatite was reported from the apatite magnetite deposits of Singhbhum ; the value of the production was Rs. 10,820 (£721). There was also a production of 3,680 tons of "phosphate" valued at Rs. 70,000 (£4,667) from the Nandup area in Singhbhum, against 1,340 tons valued at Rs. 17,000 (£1,133) in 1922.

Asbestos.—The production of asbestos amounted to 247 tons valued at Rs. 9,880 (£659) in 1923 as against 242 tons valued at Rs. 10,520 (£701) in the preceding year. The whole output came from the Hassan district in the Mysore State. There was no production from the Central Provinces.

Barytes.—Of the total production of 2,570 tons of barytes valued at Rs. 42,749 (£2,850), 1,603 tons valued at Rs. 22,749 (£1,517) were reported from the Kurnool district of the Madras Presidency, and the balance, 967 tons valued at Rs. 20,000 (£1,333), from the Alwar State, Rajputana. The total output in 1922 amounted to 2,392.2 tons valued at Rs. 48,000 (£3,200).

Bauxite.—An output of 5,768 tons of bauxite valued at Rs. 54,065 (£3,604) was reported from Kaira in the Bombay Presidency. The Katni Cement and Industrial Company, Limited, extracted 779 tons of bauxite valued at Rs. 1,168 (£78) from the mines in the Jubbulpore district, Central Provinces. There was no production of bauxite in the Savantvadi State during the year 1923.

Building Materials and Road-Metal.—The total estimated value of building stone and road-metal produced in the year under consideration was Rs. 76,86,138 (£512,409). Certain returns supplied in cubic feet have been converted into tons on the basis of certain assumed relations between volume and weight.

Clay.—The recorded production of clay rose from 102,755 tons valued at Rs. 2,53,502

(£16,900) in 1922 to 148,112 tons valued at Rs. 3,20,333 (£21,356) in 1923.

Fuller's Earth.—There was a further and larger rise in the total production of Fuller's Earth, amounting to 27,696 tons valued at Rs. 57,168 (£3,811), against 13,550 tons valued at Rs. 36,764 (£2,451) in 1922.

Gypsum.—The production of gypsum fell from 12,329.5 tons valued at Rs. 19,725 (£1,315) in 1922 to 10,280 tons valued at Rs. 17,351 (£1,156) in the year under review. The mineral hitherto reported from the Bikanir State in Rajputana as "sweet lime", the vernacular name for gypsum, has been found on examination to be deposited limestone, slightly tufaceous, with a little sulphate.

Hyalite.—An output of 12.5 cwts. of hyalite, a colourless variety of opal, valued at Rs. 5,282 (£352) was reported from Katha in Burma.

Ilmenite.—The output of ilmenite rose from 400 tons valued at £1,200 in 1922 to 700 tons valued at £2,100 in 1923.

Ochre.—The total production of ochre in 1923 amounted to 8,705.6 tons valued at Rs. 66,922 (£4,461), against 6,701.4 tons valued at Rs. 57,086 (£3,805) in the preceding year.

Soda.—There was a decrease in the production of soda in the Ladak tahsil, Kashmir, from 28 tons, valued at Rs. 1,021 (£68) in 1922 to about 7 tons, valued at Rs. 249 (£17) in the year under review. Salt consisting for the greater part of sodium carbonate, sodium bicarbonate and sodium chloride is obtained by evaporation from the waters of the Lonar Lake in the Buldana district of the Central Provinces. It is known under the general name of *trona* or *urao* for which there is no suitable equivalent in English. Its three chief varieties are *Dalla Khar, Papadi* and *Bhooski,* according to the proportion of neutral carbonate; the first contains sodium chloride sometimes to the extent of 50 per cent. The total amount of *trona* or *urao* extracted in 1923 was 600 tons valued at Rs. 23,750 (£1,583).

Steatite.—There was a considerable rise in the production of steatite from 906 tons valued at Rs. 36,489 (£2,432) in 1922 to 2,257 tons valued at Rs. 49,353 (£3,290) in the year under consideration.

Zircon.—The production of zircon in the Travancore State fell from 160 tons valued at £1,280 in 1922 to 145 tons valued at £1,160 in 1923.

The Coffee Industry of British East Africa.

H. M. Trade Commissioner in East Africa, in his Report on the Trade and Commerce of East Africa for the year ended 30th September, 1924, states that the exports of coffee in 1923, which amounted to 184,400 cwts., are made up of 139,028 cwts. from Kenya and 45,372 cwts. from Uganda. The estimated production of coffee in Kenya for the year 1923-24 is 122,885 cwts., the increase being largely due to new areas coming into bearing. In Uganda the scheme of native production of Robusta, in the Mount Elgon district, is now well in hand, and both the Government and planters welcome the extension of such encouragement to other districts. The export of coffee from Tanganyika during the first half of 1924 amounted to 37,444 cwts., as compared with 29,106 cwts. in the corresponding period of 1923. The estimated production for the whole of 1924 amounts to 85,000 to 90,000 cwts., of which 56,000 cwts. is expected from the Bukoba district. The coffee grown by natives generally in East Africa is quite distinct from that grown on European estates, but during the past year a certain amount of land, which had been planted with coffee by the Germans on the slopes of Kilimanjaro, was re-included in the "Native Reserves". The district planters raised many objections to the natives being encouraged to grow a crop needing extreme care against the introduction of disease. The experiments, however, continue, and some 20 tons were exported in 1923—a figure estimated to increase to 60 tons in 1924. The Government are, however, fully aware of the possible dangers of the experiment, and are watching the crops carefully.

Economics in the West.

The Gold Standard.

28*th February*, 1925.—The Right Hon. R. McKenna, Chairman of the Midland Bank, Limited, speaking at the Ordinary General Meeting of Shareholders held on January 27, 1925, offered some apt remarks on the gold standard. I give below the material parts of the address :—

During the year that has just elapsed Europe has made a remarkable approach to stable conditions of money. After almost unparallelled inflationary excesses a painful struggle is being made towards balanced budgets, national solvency, and a sound monetary basis. In England inflation was never carried to a point at which alarm could be felt for the permanent stability of our currency, but we have not been without our own anxieties. The fear was expressed that the position of London as the financial centre of the world might be endangered by the decline of our currency from gold parity, and the threat was thought to be accentuated by the re-establishment of the German mark. Whatever the real gravity of the danger, however we may hope now for an early escape from it. The movement in the American exchange has quite recently brought the pound within measurable distance of parity with the dollar, and the full restoration of the pre-war monetary system is generally expected. A reinstatement of the gold standard will be an event of first rate importance, and with your permission I should like to say something on the subject of currency values before I come to my review of the work of the Bank.

Currency Values and Gold Control.

The question of currency values opens a wide field of discussion. It covers all such topics as the relation between currency and credit, price level, trade and employment. It touches economic problems which have attained a new significance through the growth of joint stock banking and the wide extension of the use of credit in trade. Although the older economists throw but little light on the subject in its recent developments, some of the foremost of our modern teachers, both here and in America, are giving considerable attention to it. They point out that a close connection exists between currency value and the volume of credit, and they discuss the possibility of a more effective use of credit control as a means of modifying fluctuations in the price level, preventing trade crises, and mitigating the extremes of unemployment. But we are still in the stage of inquiry rather than of positive opinion, and there is no formulated body of doctrine generally regarded as orthodox.

The problems of credit are in a sense inherent in the banking system, but their full gravity has only become apparent since the war. Before 1914 there existed a condition which concealed the underlying importance of credit control. The growth of joint stock banking occurred when gold was the basis of all the principal currencies, and the movement of gold regulated almost automatically the issue of currency and the supply of credit. As long as the world's output of gold was not too much above or below current requirements, the central banking institutions in the different countries had normally little difficulty in adjusting their policy to meet the needs of trade. We had, it is true, from time to time financial crises when the automatic machinery broke down, but in our own country at any rate immediate relief was always obtainable. The gold control was suspended by a letter from the Chancellor of the Exchequer authorizing the Bank of England to issue notes against securities in excess of the limit imposed by the Bank Charter Act, and confidence was invariably restored.

To-day we live under a new dispensation. In countries that have been forced off the gold standard we have seen the latent possibilities of credit inflation and currency depreciation, which had never in modern experience appeared in their extreme manifestations. Here we are nominally, though not actually, still on the gold standard and,

as is so often the case with us, we retain the laws and forms appropriate to conditions which no longer in fact exist. By statute the currency note is convertible into gold on demand, but we all know that we respect the law best when we do not avail ourselves of its provisions. The free issue of paper money was only permitted in times of crisis before the war as an urgent and temporary measure of relief, but to-day currency notes may be put into circulation to an indefinite amount with no other legal backing than a Government debt. I say legal backing because there exists a Treasury Minute which places some restriction upon the issue of notes, but even this Minute would have to be modified or withdrawn in certain readily conceivable conditions.

Changes in Purchasing Power.

During the ten years that the currency note has been in existence our currency has varied widely in value in relation to its nominal gold equivalent, or in other words in relation to the dollar. The sterling exchange has ranged from 3.19 to a point within two per cent of parity. In February 1923 it reached 4.72, and in January 1924 it fell again to 4.21. The pound sterling is now finding its way back to parity and will probably soon stand at its full gold value, not because it will have climbed uphill to meet the dollar but because the dollar under the pressure of the surplus supply of gold will have come down to the level of the pound. In forecasting the immediate future relation of the two currencies many factors have to be taken into account, but ultimately the dominant consideration is the relative movement of prices in the two countries. The index figure of wholesale prices marks changes in the purchasing power of a currency, and the fluctuations of the index figure measure the degree of a currency's stability. While, as we have just seen, the pound has varied considerably in relation to the dollar, sometimes rising, sometimes falling, the mean deviation from the yearly average price level in each of the years 1922, 1923 and 1924 has been less in England than in the United States. In 1922 the mean deviation from the British average was 2.87 and from the American 6.34; in 1923 the figures were 2.37 and 2.99 respectively; and in 1924 they were 2.58 and 2.91. If we take the whole period 1922 to 1924 the respective mean deviations were 4.30 and 4.90. Thus, on the basis of the official index numbers, the price level in England has been more stable during the last three years than in the United States. Measured by the standard of purchasing power the pound, which is not on the gold standard and has no regular restriction on its issue, has maintained stability better than the dollar, which is based on gold. How can this happen?

To answer this question we must turn our attention to a larger subject than currency. We have to consider money, of which currency forms only a part, and we must begin with a definition of the term.

Meaning of Money.

The word money is currently used in many different senses and is associated with a great diversity of ideas. One of two well-known books bearing the title "Money" deals with problems to which not even a reference is made in the other. We read daily that money is cheap or dear, easy or tight. We say of one man that he is worth so much money and of another that he has so much in his business. We think of money as wealth and we habitually speak of it as capital. When we see any marked expenditure by the public we express our wonder where all the money comes from. But if we examine these phrases, so familiar to us all, we shall find that the word money is used with several different meanings. In order to make myself clear I shall define money in relation to my argument as currency in circulation and bank deposits drawable by cheque, but it would be pedantry to allege that other uses of the word are not equally warranted. The money we speak of as cheap or dear, easy or tight, is that part of the whole volume of money which is ordinarily lent by the banks from day to day in the discount market. The term money is used as a measure of value, and not as the thing itself, when we say a man is worth so much or has so much in his business. Money may properly be used in the sense of wealth in the hands of an individual owner, but with

the exception of the comparatively small part consisting of gold, silver or copper, which has a commodity value, it is not national wealth. With this reservation money is never capital in itself. According to the way in which it is spent it may be an agent for the creation or destruction of capital. When it is spent on production, capital is brought into being: when it is spent on consumption, capital is consumed. It is only when we get to the often repeated question, where does all the money come from, that we find the word used in the more restricted meaning of purchasing power, which is the meaning I am attributing to it to-day.

Creation and Cancellation of Credit.

I understand by it all currency in circulation together with bank deposits drawable by cheque, which in the aggregate represent the purchasing power of the public. By far the larger part of our total money consists of bank deposits. The quantity of money is constantly varying, increasing or diminishing from time to time in consequence of the action of the banks, to which I shall refer later. I would at all hazards avoid entering the region of old economic controversy, but I do not think I am stating anything more than will be accepted to-day as a truism when I say that price level is dependent upon the quantity of money, the rate at which it is expended, and the amount of goods and services available for purchase. The quantity of money is thus one of the three prime factors determining the price level, and it follows that whatever controls the quantity of money is to that extent determining its value.

I am afraid the ordinary citizen will not like to be told that the banks or the Bank of England can create or destroy money. We are in the habit of thinking of money as wealth, as indeed it is in the hands of the individual who owns it, wealth in the most liquid form, and we do not like to hear that some private institution can create it at pleasure. It conjures up a picture of an autocratic and irresponsible body which by some black art of its own contriving can increase or diminish wealth, and presumably make a great deal of profit in the process. But I need hardly say nothing of the sort happens. A bank loan creates a deposit and therefore it creates money. But the deposit is a liability of the bank against which a debt is due to it, and the bank merely stands as intermediary between the depositor and the borrower. Even the currency itself, except in so far as it is in specie with a commercial value as metal, represents nothing more than a debt due from the Government or from the Bank of England. All that is done by the banks when they create money is to increase the amount of debts due to and from themselves.

The power of the banks to increase or diminish the total volume of money arises from the fact that when a bank makes a loan or discounts a bill or buys a security, a deposit is created; and when the loan is paid off or the bill met or the security sold, the deposit is cancelled. It will be found, however, on examination that the exercise of this power is in practice strictly limited. In the regular conduct of business banks maintain a definite proportion between their holding of cash and the amount of their deposits. Anyone who cares to study the monthly statements of accounts published by the London Clearing Banks will see that, though there may be temporary variations in the proportion of cash to deposits, there is in each case close conformity to an accepted ratio. Now, although a bank loan increases the aggregate of bank deposits, it does not increase the aggregate of bank cash, and it follows that, so long as each bank adheres to its conventional cash ratio, the power of the banks to create money is limited by their power to obtain additional cash.

Central Bank Control.

The cash held by the banks consists of currency and balances at the Bank of England. We shall not go far astray if we confine our attention to the Bank of England balances and leave currency out of consideration, as the causes which affect the former usually govern the amount of the latter. What is it that sends these balances up and down? For an answer I get back to the old formula, applying it now to the

special case of the Bank of England. When the Bank of England makes a loan or discounts a bill or buys a security, or indeed anything, it creates a deposit, which in the ordinary course of trade becomes a deposit of one of the banks with the Bank of England itself. In the same way, when the loan is paid off or the bill met or the security sold, a deposit of some bank with the Bank of England to the amount of the loan, bill or security is cancelled. Thus the action of the Bank of England in lending or calling in, buying or selling, regulates the cash held by the other banks, and inasmuch as this cash is the basis of their loans to the public it follows that the Bank of England ultimately controls the amount of deposits, that is to say the amount of money.

The capacity to increase or diminish the quantity of money, and thereby to depreciate or enhance its value, is inherent in the ordinary powers of a central bank. If the currency is on the gold standard this power can only be exercised within narrow limits, as the movement of gold will very soon act as a check ; but where this standard is not in operation the full responsibility for maintaining the value of money falls upon the central bank. The obvious guides to the central bank in directing its policy are the movements of the price level and the general state of trade and employment. The price level is not of itself a sufficient indication, as rising prices may be due not to an over-abundance of money but to an under-supply of goods available for purchase, consequent for instance upon a temporary shortage in the world supply of food and raw materials. In such a case a restriction of credit would tend to keep prices down, but it would be at the expense of trade and would lead to increased unemployment. On the other hand falling prices might be due to exceptional abundance of natural products, and in that case an increase of credit would have an inflationary effect. Constant vigilance is needed on the part of the central bank to ensure that the causes of rising or falling prices are correctly diagnosed. Nor does the need for vigilance end here. Many central banks do commercial business for their own customers. They not only meet the needs of the money market in the temporary fluctuations of supply and demand, but they make domestic and foreign loans on their own account quite independently of the market conditions at the moment. Such loans may cause excessive ease of money ; their repayment excessive stringency ; and unless care is taken to counteract these effects when necessary, by a sale or purchase of securities, trade will be unduly stimulated or unduly depressed.

Gold as Regulator of Credit.

I have dealt with the factors governing our present currency which, so far as it consists of currency notes, is only limited in its quantity by the control of credit. In the customary phrase of the day it is a "managed" currency, as distinguished from one limited in amount by legal enactment, which usually takes the form of a restriction of issue except against gold. Beyond the fiduciary issue, £18,450,000 before the war and £19,750,000 now, Bank of England notes have to be covered pound for pound by gold. Federal Reserve notes, the principal currency of the United States, must have a minimum cover of 40 per cent in gold ; and 30 per cent must be held against the notes now being put into circulation by the Reichsbank. Similarly the new currencies which are being established in other parts of Europe all have some definite relation to gold, conforming in this respect to the principle of limitation of issue almost universal before the war.

The pre-war restriction on the Bank of England note issue operated in practice as a restriction on credit in consequence of the maintenance by the Bank of a fairly constant ratio of reserve to liabilities. Since the introduction of the currency note however, there has been no such strict adherence to a customary proportion. In other countries credit control has been provided for in some cases by statutory requirement. Thus the Federal Reserve Banks of the United States are obliged to maintain minimum cover of 35 per cent in legal tender against the demand deposits held with them by their member banks, and the new Reichsbank Act prescribes a reserve of

40 per cent in defined liquid assets against day-to-day obligations.

When a currency is on a gold basis its value is fixed in relation to one commodity only, namely gold. We are apt to think that the value of gold is constant because so many grains are always exchangeable for a sovereign. But how unstable it may be in relation to commodities in general is shown by the recent history of the dollar, the purchasing power of which in 1914 was two-and-a-half times greater than in 1920. It will be found that while through the centuries gold in terms of goods and services has continuously depreciated, it has undergone considerable fluctuations in quite short periods of time. The value of gold, like that of any other commodity, varies with changes in supply, demand, and cost of production. Each of these factors is constantly undergoing slight modifications, but from time to time great events occur which cause a permanent change in their relationship. Of this nature was the discovery of the South African mining field and more recently the reduction in the effective demand for gold arising from the mobilization during the war of hoarded stores in the belligerent countries.

Changes in Value of Gold.

We are all familiar with the conditions under which an ordinary trade commodity falls in value. Sellers offer more than buyers will take at the current price and the price is reduced. But in the case of gold the process is not so simple. Sellers of gold can always obtain the full statutory price for their commodity in a gold standard currency, and there must be a depreciation of the currency, that is to say, an upward movement in the price level, before there can be a reduction in the real return for the gold. How this depreciation happens is worth considering. The explanation is much simplified in present circumstances by the fact that there is now only one completely free gold market, the United States, and we can therefore restrict our view to what occurs in that country.

When gold, whether of native or foreign production, is offered for sale to any of the Federal Reserve Banks, it will be bought at its full rate of so many grains weight for a dollar. As the Federal Reserve Banks are central banking institutions, we remember that the effect of a purchase by any one of them is to create so much additional cash standing to the credit of the member banks. It is hardly necessary to repeat that this cash becomes the basis of additional loans, which create new deposits, or in other words increase the purchasing power of the public. Increased purchasing power unaccompanied by greater production leads to higher prices, and thus we complete the chain of events by which a purchase of gold is connected with a decline in value of the currency.

It is obvious that, if the Reserve Bank sells securities or reduces the bills in its portfolio by an amount equal in value to the gold it buys, the two transactions cancel each other so far as they affect the balances of the member banks. In such case the Reserve Bank has substituted gold in its assets for securities or bills. Nothing more will have happened; there is no change in the deposits of the member banks, no increased purchasing power in the hands of the public, and no decline in value of the dollar. But the Reserve Bank cannot adopt this course except at a sacrifice of profit. It must exchange its profit-earning assets for gold which bears no interest, a policy which obviously cannot be carried beyond a certain point. There is a limit to the reduction in profit-earning assets, and even a Reserve Bank has to consider the desirability of defraying expenses out of income and of meeting the demands upon it for dividends.

Effect of Gold Imports.

During a period of fifteen months the effect of an inflow of gold in creating an expansion of credit was successfully counteracted, and it is interesting to note the actual course of events as recorded in the consolidated statement of the twelve Federal Reserve Banks. In April 1923 twenty-three per cent of the total assets consisted of earning assets, such as bills and securities, sixty per cent consisted of gold, and the remaining seventeen per cent of other non-earning assets. In July 1924 the corresponding figures showed seventeen per cent

earning assets, sixty-six per cent gold and seventeen per cent other non-earning assets. Since then earning assets have increased to twenty-four per cent, which has meant an upward movement in the balances of the member banks and a very considerable addition to the purchasing power of the public. The figures suggest that the Federal Reserve Board felt last summer that they had gone far enough in the policy of sacrificing earning assets in order to neutralize the effect of the incoming gold.

The larger movements in the sterling-dollar exchange have followed the course of the policy of the Federal Reserve Board. That policy has determined rates for money in the United States. When rates of interest were high, floating balances were held in New York and dollars bought in order to lend in that centre. When rates were low, dollars were sold and floating balances in sterling retained in order to lend in London. Thus money rates may exercise a powerful, though temporary, influence on the exchange through the transfer of balances. Ultimately the rate of exchange must approximate to the relation between the price levels in the two countries, but although this is the dominant factor there are other influences to which the exchange is sensitive and which operate upon it before the movements in price level can exercise their full effect. There is moreover such a thing as intelligent anticipation, and those whose business it is to understand the underlying conditions affecting exchange take their view of the market and act accordingly long in advance of any change in commodity prices. The recent rise of sterling in relation to the dollar has gone considerably ahead of changes in price level, but if the rise is maintained we may be sure the price levels will finally conform to the new relation of value between the currencies.

Superiority of Gold Standard.

Let me summarize in a sentence what I have said so far. I have endeavoured to explain the meaning of a managed currency and the method of maintaining its value by regulating the quantity of money through the control of credit, and I have shown that during the last three years a managed currency has been kept more stable than one based on gold. We can supplement this favourable view by the further observation that considerable economy is effected by its use, as there is no need to incur the cost involved in buying and holding gold as a reserve. But when so much has been said, and it must be granted that it is a great deal, the case for a managed currency must be regarded as closed. On the other hand the gold standard has in existing circumstances great and striking advantages. In the first place it establishes an international measure of value, common to the whole world and universally accepted. It is automatic in its operation and it relieves the central banks of a responsibility which, notwithstanding our own fortunate experience, might not always be discharged with the knowledge and judgment indispensable for the prosperity of national trade. It is not however wholly inelastic. There is still scope under it for an exercise of discretion by the central institution, as we have seen in the recent action of the Federal Reserve Board. In our own country the effect of a movement of gold can to a considerable extent be counteracted by the Bank of England raising or lowering the ratio of reserve to liabilities.

But in the present state of knowledge and feeling one of the greatest advantages of the gold standard is its moral effect. A nation will think better of itself, will almost regard itself as more honest, if its currency is convertible into gold. The fear of being forced off the gold standard acts as a salutary check on the extravagance of Governments who might be willing to face a mere fluctuation in exchange but would not dare to suspend specie payment. It is a real advantage to a nation to have a currency founded upon a value which is universally recognized ; it inspires confidence and facilitates international transactions. Even if the gold standard were not preferable for other reasons its universality would be decisive in its favour. The argument may, it is true, be founded on psychological and not on economic grounds, but it is none the less powerful, as we have not yet reached the stage where economic

considerations alone guide us in judging the desirability of any particular method or system. So long as nine people out of ten in every country think the gold standard the best, it is the best. If in the future there were an immense increase or decrease in the output of gold and consequently a startling rise or fall in prices, re-consideration of the subject might be forced upon public attention, but at present there is no single nation, so far as I know, which is now off the gold standard, that does not regard the return to it as the most desirable of all financial measures.

In conclusion Mr. McKenna said :—Let me in closing say one word about the future. I realize that to prophesy is at all times a hazardous and thankless venture. But we may with prudence take a survey of existing conditions and if we do so now I think it safe to say that the signs are propitious for an expansion of business in the coming year. We have many hopeful indications in the foreign situation. The happy outcome of the Dawes Report and the London Conference, the successful efforts at reconstruction in Central Europe and the satisfactory results of the negotiations just concluded in Paris are all events which mark stages in the progress of the world towards true conditions of peace. But however important the restoration of Europe may be it cannot bring us prosperity unless our internal conditions are sound. The pressure of taxes, which is far heavier in this country than in any other in the world, is too great for our trade to bear. Our present taxation eats deep into the reserves which are indispensable for business expansion, and we cannot develop as we would wish without increased capital resources. Economy in national expenditure is vital. Happily there is no occasion at the present time for any addition to the burden of armaments. The world is now and will be for many years under the impression of the horror of the Great War, and we can economise in this field with prudence and safety. But it is not here alone that the closest scrutiny is needed. Every shilling that can be saved now and devoted to the relief of taxation will come back to the revenue in future years in the larger receipts obtained from more prosperous industry. With international pacification and with reasonable reductions in taxation it will remain only for all to unite in one sincere co-operative effort to assure conditions of lasting prosperity.

Sir M. Visvesvaraya.

The following paragraph taken from an article contributed to the *Servant of India* by the Rt. Hon'ble Mr. V. Srinivasa Sastri on his first meeting with the late Mr. Gokhale will be read with interest :—One of the men I met during this visit was Mr. Visvesvaraya, who had not been knighted and who, by the way, in spite of his irreproachable modernity, has not chosen to call himself Mokshagundam. He was then in charge of a water works scheme for Poona and came to see Gokhale who was President of the Municipality. After he left, Gokhale spoke of him in high terms and added, surveying me up and down with compassionate disapproval, "You see, how correctly he is dressed ; he is equally precise in his work and in his engagements. If I had such men to deal with in all my business, I could wish for nothing better." My inclination after this was to keep at a respectful distance from him ; but what was my surprise when, on Gokhale taking me to the Hira Bagh Club and leaving me in the hands of Mr. Visvesvaraya, he actually took me round the place and presented me to his friends just as he would have presented any respectable visitor ! I have met him several times since then and every time I have thought of Gokhale also, to whom, in spite of striking superficial differences, he bore a deep similarity in scrupulous observance of the courtesies of social life, in strict regard for duty, in catholic outlook and in passion for work.

Canadian Trade and Finance.

Montreal, February 1st, 1925.—Continued strength in wheat prices is attracting much attention to the world statistical position of that commodity. Wheat's change of form, from a price point of view, has been very rapid ; compare the price of less than $1.00 per bushel for No. 1 Northern wheat in Winnipeg in January 1924 with present prices of close to $2.00 per bushel. As the bulk of our 1924 crop has already left the farmers' hands, our main interest in the market at the present time centres on price prospects for the 1925 crop. Wheat prices commenced to fall in 1920 along with the prices of other commodities. The low point for the post-war period was not, however, reached in 1921. Both in 1921 and in 1922 world crops were reasonably good ; they were substantially in excess of the 1920 crop, and somewhat larger than the average crops of the years 1909-13. In 1923, unusually favourable weather conditions in many of the important producing countries resulted in a crop of 3,488,000,000 bushels (not including Russia), an increase of more than 300,000,000 bushels over the preceding year. This was the final blow so far as wheat prices were concerned. According to statistics published by the Food Research Institute of Stanford University in California, a bushel of wheat in Canada in 1923-24 commanded 30 per cent less in terms of goods than it did in the years 1909-14. European consumption was stimulated by these very low prices and the Orient increased its purchases substantially. As a result, the world carry over in 1924 at the end of the crop year, though larger than in 1923, was not nearly as large as might have been expected, and a decrease of about 450,000,000 bushels in the 1924-25 world crop (present estimates) left the world short of wheat for this season. An indication of the change which has taken place in the situation is found in the fact that Russia, instead of exporting wheat as she did in 1923-24, has purchased a large amount of flour from North America.

While it is not inconceivable that the exceptionally favourable weather conditions throughout the main wheat producing areas of the world, which resulted in the large crop of 1923, might be repeated in the coming season, the chances are against this taking place. Obviously none can form a definite opinion in regard to our farmers' prospects for 1925-26 until the crop is harvested, but it can at least be said that the prospects look distinctly better than they did a year ago.

Great Britain and Canada.

One of the most important factors in the development of Canada has been our commercial and financial relationship with Great Britain. The effect of the war on international trade in general, and on Great Britain's economic situation in particular, tended to lessen the importance of this relationship from a financial point of view, and even affected the relative importance of our trade relations with the Mother Country in the post-war years. We are now, however, commencing a period during which more normal conditions will prevail, and may very well consider at this time the changes or developments which may be expected to take place in our commercial and financial intercourse with Great Britain.

In considering the pre-war situation, it is unnecessary to go farther back than the beginning of the century. The period from 1900 to 1913 was the time of Canada's most rapid progress, and to this progress Great Britain contributed more than any other outside country, although the United States ran her a close second. During those fourteen years, in spite of a rapid increase in Canadian exports to the United States, Great Britain took $1,803,000,000 worth of our goods, compared with $1,245,000,000 sold to the United States, and sent us close to 1,000,000 new citizens, which compares with 900,000 who came to Canada from the United States. The great importance of the Mother Country's contribution to Canadian prosperity is even more definitely established when the financial assistance extended is taken into consideration. The great proportion of the outside capital required by Canada for development purposes came from London, British investments in Canada during the period under discussion being

estimated at $1,753,000,000 compared with U. S. investments of $629,000,000. Now the war, while it did not lessen Great Britain's demand for Canadian products, even after the cessation of hostilities, did interfere with her capacity for competing with the United States in the Canadian Market, and gave the latter country an advantage which has not yet been overcome. Moreover, with sterling at a fluctuating discount in this country, English investments in Canadian industries or Canadian bond flotations in London were almost entirely cut out, and Canada was forced to look to the United States Money Market for such outside financial assistance as she required.

So far as the future is concerned, it is interesting to consider the subject under four heads, as follows :—

1. Canadian exports to Great Britain.
2. Canadian imports from Great Britain.
3. British Emigration to Canada.
4. Canadian financial relation with Great Britain.

Exports.

The great bulk of our exports to Great Britain has always been composed of foodstuffs—agricultural and animal products —of which wheat, flour, barley, oats, bacon and cheese are the most important. The value of wheat sold to Great Britain is of course in excess of the value of any other item, and amounted to $191,000,000 during the twelve months ending November 1924, a period during which our total sales to Great Britain were valued at $388,000,000.

It will be seen from the figures printed below that our exports to Great Britain have more than doubled in value since 1913 ; even after allowing for the increase in prices since that time, it remains obvious that the volume of our shipments has increased substantially.

Exports to Great Britain

(Millions of Dollars)

	Agricultural and Animal Products	Forest Products	Total Exports
1913 ..	$142	$12	$178
1914 ..	181	13	222
1922 ..	266	16	300
1923 ..	532	20	379
12 Months ending Nov. 1924	337	17	388

As Canada urgently requires larger markets for the products of her farms, in order that increased population and increased production may be justified, the importance of the great British market is self-evident. Not only do we want a larger share of that market for Canadian wheat, but we want to increase our sales of cattle, bacon, packing house products in general, cheese, butter, apples, fish, eggs and other foodstuffs. Advertising, proper salesmanship, and most important of all, the production of a class of product suited to British tastes, and of a uniform standard of quality, are necessary for success. We believe that Canada is making progress along these lines. While the consumption in Great Britain of certain articles, such as wheat, is not likely to increase to any extent except as population increases, greater prosperity should enlarge the consumption of goods of other classes, and favourable prospects for better business conditions in Great Britain during 1925 and subsequent years are, therefore, a good omen for Canadian producers.

The figures printed above show that exports of wood and wood products have increased less than 50 per cent in value since 1913, and it may therefore be assumed that volume has not increased at all. European competition has been an unfavourable factor. It is to be hoped that greater prosperity will result in larger purchases ofCanadian lumber, since the restricted British demand has been a bad feature of the lumber business of Canada for some time.

Imports.

Turning to imports, it can be seen from the following figures that Great Britain has lost ground in the Canadian market during the last twelve years, since the value of her sales to Canada increased so slightly that the volume is evidently materially less. During this period, the value of our importations from the United States increased from $437,000,000 to $528,000,000.

Imports from Great Britain.

	(Millions of Dollars) Imports	Percentage of Total Imports
1913 ..	$139	20.7
1914 ..	132	21.4
1922 ..	117	15.7
1923 ..	141	17.6
12 Months ending November 1924	148	18.6

The Old Country's main exports to Canada are woollen and cotton goods, and iron and steel products, mainly rolling mill products, machinery and wire. The United States for many years has supplied the great bulk of Canada's importations of iron and steel products, and Great Britain is not in a noticeably less favourable position in the Canadian market than she was before the war, so far as these commodities are concerned. Inroads of U. S. manufacturers are most noticeable in the textile market. During the last twelve months, however, there has been an evident tendency for British manufacturers to recover part of the ground lost during the war.

So far as the Canadian Market in general is concerned, the United States, by reason of its proximity to the Dominion, has certain distinct advantages over Great Britain. United States firms have less difficulty in establishing branch houses, their salesmen can cover Canadian territory without the expense of a long ocean journey, and their shipments reach the Canadian destination with less delay than those from Overseas. On the other hand, Great Britain enjoys a substantial Tariff Preference. Some of the disadvantages under which Great Britain labours can be partially offset if greater attention is given to the Canadian market. Manufacturers on the other side of the water are in general keen to extend their sales, and we have seen evidences of a new attitude on their part, a greater show of interest in business prospects in Canada, and a willingness to adopt new methods of handling the business, where new methods seem necessary. The establishment of branch houses or of some form of improved representation in Canada, may very well prove to be a development of the next few years in Great Britain's selling tactics in this country. Canada is not anxious for the kind of outside competition which would have as a result the restriction of sales of Canadian-made goods, but if, as seems possible, Great Britain can increase her sales at the expense of other countries, we could not but regard it as a favourable development, since the Motor Country needs to-day all the business she can get. Moreover, as indicated above, we have a very direct interest in her prosperity, since sales of many classes of Canadian products are affected by the business conditions prevailing in Great Britain.

Immigration.

Almost 1,000,000 settlers came to Canada from the United Kingdom during the fourteen years 1900-1913, thus contributing greatly to the development of the country during that period. The movement has been greatly restricted even since the war, because of lack of favourable opportunities for making money either in agriculture or industry in Canada. As times become better, however, we can again look to Great Britain for the type of immigrant who is most likely to achieve success and become a satisfied citizen of Canada. It is to be regretted that some criticisms on emigration to Canada to which the Overseas press has given publicity at various times during the last year or so, have been based on partial information, and have shown in general an incomplete appreciation of the present situation in the Dominion or its future possibilities. With many agricultural products—notably wheat—selling at excessively low prices until recently, Canada did not offer the best of opportunities to settlers of the farming type, while industrial depression restricted our power to absorb other classes of workers. The industrial situation is not yet such as to warrant an increase in general immigration, and this situation is not likely to change materially during the first nine months of 1925. The prospects for farmers have, however, improved greatly, and those who now come to this country after proper investigation of the situation, and after proper consideration of their qualifications for success in the new environment, are not likely to regret the move. The facilities for making such investigation are provided in Great Britain by the Canadian Government and the Canadian railways.

Finance.

While a return to the pre-war situation would be desirable in many departments of our economic organization, it would be most undesirable in so far as our financial relationship with Great Britain is concerned. We

can look forward with satisfaction to the resumption of gold payments by Great Britain and Canada and the subsequent reopening of the London Money Market to Canadian borrowers, but the large borrowings by public authorities, which were so common in pre-war days, must no longer be a feature of our financial relations with the Mother Country. Before the war, our conception of the immediate future of Canada was somewhat too optimistic, with the result that too large sums of foreign capital were borrowed and invested in railways, for which freight did not materialize, and in governmental and municipal improvements, which new taxpayers did not come to share. We now await the increase in population required to justify these expenditures. In the meantime, public borrowing must be reduced to a minimum. If, however, British investors or their representatives see opportunities for placing funds in productive Canadian industries, all concerned will profit, since fresh wealth is created from which interest charges can be met and the country reaps the benefit of additional employment for its citizens. This is the type of financial relationship with Great Britain that we must hope the resumption of gold payments will result in.

SUMMARY.

Instead of Canada's commercial and financial relationship with Great Britain tending to become less important as time goes on, the tendency will be rather towards greater importance, if the outline of the situation which is presented above is not entirely inaccurate. We may expect our exports to Great Britain to increase, not only as that country's population increases in number but as Canadian products secure a better foothold in the British market ; we may expect Canadian purchases of British goods to increase in the same way and for the same reasons ; as opportunities for immigrants become more and more numerous, we may expect the influx of settlers from Great Britain to equal or even exceed that of pre-war days ; and finally, as the world requires more products of the sort which Canada can supply we may expect British investors to recognize and take advantage of opportunities for developing Canadian industries, or for sharing the profits of existing concerns by increasing their financial interest in Canadian securities.

The subject of our business relations with Great Britain has been dealt with above from a purely business viewpoint. One important factor has been left out of consideration, and that is, our attachment to Great Britain and to all things British. There is a very real desire on the part of Canadians to strengthen the ties between the Dominion and the Mother Country. Canada's feelings in this respect are not given continual publicity, but they are none the less strong for that. The whole question of Empire development seems likely to receive much attention in the next decade, and we must hope that Great Britain will take the lead in evolving practical plans for a fuller utilization of the Empire's great natural resources.

(*Continued from page* 118.)

Federal Government toward encouraging the migration of British capital to Canada. Canada has four Trade Commissioners in the United Kingdom, while the leading Canadian Provinces maintain Agents-General in London. One of the most important of the functions of those officials is to encourage among British manufacturers the establishment of branch plants in Canada. Every city in Canada supports a Board of Trade or Chamber of Commerce or both, and every organization of this description maintains a Committee whose duty it is to induce Canadian, British and American capital to establish industries in their respective districts. I enclose a copy of an issue of the official organ of the Brantford Chamber of Commerce containing an example of the way in which Chambers of Commerce of Canadian cities 'go after' outside capital. The example referred to here is quite typical of Canadian Chamber of Commerce methods. Some of the smaller Canadian Municipalities go the length of granting exemption from taxes to firms establishing factories within their limits. An example of this will be found on page 90 of the issue of 'Industrial Canada' which I am sending you. In this case the capital was German."

Books in Brief.

Short Reviews of Recent Books.

Reverse Councils and other Organized Plunders.

By T. S. Krishnamurti Iyer. Published by Messrs. Ganesh & Co., Madras. Price Rs. 3 or 5*sh*.

This is a welcome publication on the vexed topic of Indian Exchange and Currency. It embodies a passionate but reasoned plea for the revocation of Reverse Councils.

Almost the key-note is struck when the staggering problem is neatly and tersely put, poverty, misery, paucity and dearth of money, alongside and in spite of a favourable balance of trade. The author ascribes all ills like high taxation, low purchasing power to the policy of the Government and subscribes to the view that India has been the pivot of England's after-war finance.

The clues leading to that labyrinth of "Reverse Councils," according to the author, are afforded by Mr. Ainscough, by Mr. Moreten Frewen, who favours the idea that but for Reverse Councils liquidating India's resources in London, the drain on England's gold and resources, would be enormous; by Major Grogan who is so dangerously out-spoken as to allude to "financial influence leading to a pre-meditated policy of sweeping every Indian debtor into the maw of the British Banking Trust", the real purpose being to depreciate sterling in terms of the Rupee, the ostensible pretext being the concern to show savings in Home charges and the fear of inconvertibility; above all by the Government's *communique* of the 22nd April 1920 which admits that the purpose of the sale of Indian gold was to raise sterling in terms of dollar, "to raise sterling to its parity with gold by keeping out India from the gold market".

The losses due to Reverse Councils, sold when they were not needed, are estimated by the author at £300 millions or 500 crores and have taken many forms as low rates in sterling securities, liquidation of English debts, without India getting any return, the flight of capital, the decrease in national wealth, huge business-loans raised by the Government, public bodies and private corporations, £110 millions in 3 years, exchange losses, losses in revenue and the prevention of the import of gold into India alongside of a stimulus to the export of gold from it.

Speaking of the estimated losses, the author waxes eloquent on how India's £55 millions in the Paper Currency Reserve, invested in British Securities or Treasury Bills, were wiped out, "practically amounting to a repudiation of debt by Britain". "£57 millions being destroyed in a trice!" The author has been at immense pains to support his observations by facts and figures culled out with great insight and exactitude. He is inclined to the view, inevitable under circumstances as narrated by him, that the exchange was manipulated much to the advantage of England as against Indian, as is evident from "the great volume of accumulated orders liquidated last year by the heaviest shipment ever made by the United Kingdom to India amounting to an aggregate of no less than £204 millions. No wonder, as the favourable balance of trade to England, which used to be only £30 or 35 millions, just to cover the Home charges and which was only £8 millions in 1919-20, reached the gigantic total of £150 millions in 1920-21 and £65 millions in 1921-22. To that extent India parted with her wealth to England and dissipated her war-time savings and the latter benefitted by this dumping over India of about £150 millions more of goods, which was a record by itself. The consequences have been disastrous, to infant industries, Indian merchants, which means less earning power to Indians. The author asks why India was allowed only 16 crores of gold in spite of her 122 crores of favourable balance of trade in 1919-20. The motive is patent. While the author shares the view that India hoards gold, he yet emphatically asserts that the corrective, the foundation for it (more banks, cheques, deposits) was undermined by the Government's high interest loans, undue deflation and a high bank-rate and the people's losses on shares and securities ran as high as 200 to 300 crores. The Reverse Councils, in short, have been a monster brood of ills. The coping stone to that arch, *viz.*, the chapter on "Blight of Haileyism" is laid in the words: "If only some ghostly echo of Reverse Councils had been heard then, I could imagine Sir Malcolm Hailey getting up unnamed and unnerved and looking ferocious with all the fury of an unnatural fear and saying

> Thou can'st not say I did it: never shake
> Thy gory locks at me!"

The "loot" having been great, the beneficiaries have been many, not certainly the Indian interests. The Indian share has been £11 millions, a fifth of the total Reverse Council sales. The difference between the market rate and the Government's arbitrary rate has played into the hands of many a foreign interest, which reaped a bumper harvest, more fabled, than the most fabulous gold mine. Time and again this point was raised for debate in the Assembly by men like Sir Fazulbhoy Currimbhoy, Mr. Norton, Sir Montagu Webb, Jamnadas Mehta, Sir Purushottamdas Thakurdas.

Examining why Reverse Councils were sold, when the balance of trade was in favour of India, the author, by means of some chronological facts, deals with Paper Currency and Inflation, the policy of remitters, the balance of trade including import of gold, silver and council bills, the price of silver, the bogey of inconvertibility and the rise in prices. "Inflation and rise in prices, if truly existent, should have kept exchange down, but contrary was the case in India." Evidently it was a device to correct the depreciated exchange with America by denying India gold and feeding her on a plethora of goods. The high price of silver was of no importance, when there was no demand for council bills in 1919-20. Another reason that was adduced, *viz.*, the object of reducing the Home charges is answered by the author's query 'Why not reduce the Home charges *per se*, instead of manipulating the exchange?' Arguing there was no inflation and if any, it was imposed on India, the author ascribes the increase of 66 crores of notes of 1914 to 186 crores in 1920 to the huge balance of trade from 1914 to 1920, the heavy disbursements in India on account of His Majesty's Government, the restriction of the import of gold and the mischief of remitters, who withheld their remittances from 1917 to 1920. The rise in prices was only a stalking horse. The gravamen of the author's charge is that Reverse Councils were invoked when there was a favourable

balance. Mr. A. G. Gardiner remarks: "It is still a wonder and a mystery how the Reverse Councils came to be adopted with such extraordinary haste and secrecy." It roused his curiosity but did not rouse the ire of any Englishman. On the question of "Future Policy", the author tells us; "The only question at issue is, whether exchange shall be fixed at 1*sh.* 4*d.* sterling or 1*sh.* 4*d.* gold." Sir Basil Blackett regards all attempts at stabilization as premature and counsels a policy of inaction. The author, however, thinks that world conditions and world prices are out of place in Indian currency levels and advocates 1*sh.* 4*d.* sterling as the best rate, though not unwilling to accede to a 1*sh.* 4*d.* gold as the statutory ratio. He favours the flow of gold into India on *three* grounds: *first*, world prices would come down, if gold is allowed into the East; *secondly*, an increase in the gold-holding of any part of the Empire is better than gold in any other part of the world, *e.g.*, America; *thirdly*, the Government may rely on the Gold Standard Reserve in times of stress.

In his useful chapter on "Capital and Finance", the author treats of a regrettable episode, *viz.*, degenerate money market, destruction of money-power and the flight of the much-needed capital, high interest loans (£100 millions @ 7%) disregard of Indian national interests. He rebuts the charge that England's taxation is greater, by pointing out that England is wealthier, and the decrease in England's Taxation from 1920 while Indian Taxation has gone up by leaps and bounds.

On the whole, the volume is a valuable contribution to the literature on Indian Currency and the enterprising firm of Ganesh & Co., must be congratulated on its venture in bringing out a desired publication at an opportune moment. The get-up of the book leaves nothing to be desired.

A. S. Venkataraman.

History of Indian Tariffs.

By Professor N. J. Shah, B.A., Ph.D. Thacker & Co., Bombay. Price Rs. 7-8-0.

This thesis of Prof. Shah accepted by the authorities of the University of London for the degree of Doctor of Philosophy is a welcome addition to the scanty authoritative literature on the subject of Indian Tariffs. Sir Purushottamdas in his Foreword says: 'It will be welcome as almost the *first* effort at giving a complete and authoritative account of the evolution of the fiscal policy of the British Government in India from the earliest times. It is more a history of the past than an expression of the author's opinions.'

This work of Prof. Shah runs into 428 pages and is divided into 10 chapters of which the first five which explain the evolution of British policy from the Pre-British Period up to 1874 are very useful reading. Prof. Shah has really done a useful service in giving the prominence he has to the earlier history.

Dr. Shah summarizes the position at the death of Aurangazeb in regard to sea customs as under:

English—duty commuted to Rs. 10,000 as yearly payment and no other imports.

Dutch, French, Portuguese	2½ % +	6 annas discount per Rs. 100.
Muhammadans	2½ % +	all other duties (transit duties).
Armenians	3½ % +	other imports
Hindus	5 % +	other imports.

and explains the discrimination in favour of foreign nations to their desire to encourage the foreign trade of India but suggests that this policy betrays their lack of insight and statesmanship and their poor appreciation of the interests of the country over which they ruled. During the period from the fall of the Moghul Empire to the development of the E. I. Co. as a central power efficiency in fiscal administration ceased to exist. The nominally uniform system of national economy in the Moghul Empire gave place to distinctly rival provincial and local systems. In the earlier stages each province was administered separately rather than as part of an economic whole. 'The customs system of British India', says Prof. Shah, 'began on a provincial rather than on a national basis.'

Dr. Shah then traces the beginnings of discrimination in customs under Company administration and indicates how by Regulation III of 1811 discrimination in favour of British over foreign shipping by imposition of higher duties on goods carried by the latter was attempted. The idea was that foreigners should be twice as badly off as the British and foreign vessels were strictly excluded from the coastal trade of India. 'The effect of these', says Dr. Shah, 'was to reduce the taxation on the British trade with India to rates, the maximum of which was 2½ %. But in this intense anxiety to promote British interests, the harmful effects of such changes on the interests of Indian industry and trade were wholly overlooked. This policy also dried up some considerable sources of revenue.' Dr. Shah adds in p. 55, 'most of the imports from Great Britain were imported free....., while the generality of Indian produce and manufactures were suffering under the 'inland' duty of 7½ % and the oppressive system of collection. Interests of British commerce and industry and objects of British national policy were encouraged at the expense of Indian trade and industry.'

Summarizing the position between 1833 to 1857, Dr. Shah says that 'during this period the injurious inland duties were abolished and sea customs were better regulated. British India became one economic unit with internal freedom of trade and a common policy for her external trade. The measures of this period also were inspired by the same spirit of promoting the general interests of British shipping, British trade, and British industries. The principle of giving preference in India to British manufactures by charging a doubled duty on foreign manufactures was still continued. The abolition of export duties generally was postponed for financial reasons. The tariff thus established continued till 1859. Dr. Shah quotes approvingly the following opinion of Mr. Dutt: 'Throughout the century 1765-1865 there was no thought of fostering the weaving industry in India or of introducing the people to manufacture for themselves by means of the power-loom, or of improving their old loom. A truly national government would have sought to preserve the old national industry of India by introducing new and improved methods.'

Further, Dr. Shah is of opinion that the abolition of British fiscal laws removing restrictions in regard to Indian exports came too late and the removal was effected only when the restrictions ceased to be necessary for the purposes for which they were recommended (p. 149).

Writing about the period 1857-1874, Dr. Shah emphasizes on the point that the attempt to force Free Trade on India involved a perpetual sacrifice of a legitimate source of revenue—the customs, and suggests that even in this period British interests succeeded in forcing what was to their advantage on India. The authority of Lord Lawrence and Sir Charles Travelyan is brought out to show that India could have *substantially* increased her revenue by an all-round export duty.

The later chapters of the book dealing with the period 1874-1924 is almost modern history, and the facts of the cotton duties controversy are too recent in men's minds that it is not necessary to draw conclusions one way or the other. But Dr. Shah has done a service by indicating a continuity in policy in regard to British interests in India, and emphasizing on the necessity for India to look after her own economic interests.

We can only hope with Prof. Shah that the future of the reforms may usher in a period of fiscal autonomy —if not in law—at least in fact, thus giving India a power to right the wrongs of a century and more.

We have no doubt that Dr. Shah's contribution to the literature on the subject will find a place on the shelves of businessmen, politicians and students of economics in India.

S. V. Ayyar.

A History of the Church of England in India.

By Eyre Chatterton, D.D., Bishop of Nagpur. Published by the S. P. C. K., London. Price 12*sh.* 6*d.*

This is an eminently welcome work devoted to the development of the Church of England in India. The present reviewer has seen most of the places connected with the S. P. G. Missionaries in Southern India, and in his view a book of this nature meets a desideratum. While the book as a whole is extremely valuable, the chapters relating to South India appeal to him the most. Chapter VI, he notes, is devoted to the S. P. G. Missions in South India during the 18th century and is a carefully done piece of work. Though the story of these Missions is told briefly in it, it is enough to indicate the interest that attaches to it. For many years stray volumes of the *Church Missionary Record* had had to be ransacked for the details of the work of Ziegenbalg and his successors. The Rev. Frank Penny, in his admirable work, the *Church in Madras*, provided a new source of pleasure and made the work of those interested in Church history considerably easier by providing a continuous narrative of Church development in India. Dr. Carpenter, by his present work, supplies a felt need as regards the activities of the Protestant Missions in India. The work is well done and is enriched by illustrations, which are both well chosen and well executed. The famous mission of Christian Schwartz to Hyder Ali is referred to at page 105 of this book. There is at page 210 a reference to one "Schwartz" who apparently was connected with the activities at Nasik in the first half of the 19th century. Who this Schwartz was is not clearly stated; his Christian name is not mentioned. Wilks, in an appendix to his "History of Mysoor", refers to certain letters written by Christian Schwartz to one of His Majesty's chaplains and another friend in 1779 and 1780 giving an account of his embassy to Hyder. It would be interesting to trace the letters. Schwartz was one of the greatest Missionaries that ever came to labour in India and his name is still one to conjure with in South India. *H.*

Production of Asbestos.

The Report on Asbestos constitutes one of the series of special reports on the Mineral Industry of the British Empire and Foreign Countries. It contains detailed statistics of the world's production of the above mineral and of imports into and exports from the various countries during the years 1920 to 1922. Copies of this work, which is published by the Mineral Resources Bureau, are obtainable from H.M. Stationery Office, Imperial House, Kingsway, London, W. C. 2. Price 1*sh.* net.

From Our Readers.

To

The Editor,
Mysore Economic Journal,
Bangalore.

Medical Aid in Rural Areas.

Sir,—I have read with great profit the article on "Medical Relief in Rural Bombay" appearing in your February number. The question of medical aid in our villages is truly a national concern. The Bombay Government's solution seems a simple and satisfactory way out. Cannot our own Government be induced to look into it and see if it cannot be adopted in our State? Here is a question for some energetic and active M. L. C. of Mysore. Will he kindly take note?

25—3—25. *S.*

Industrial Finance.

Sir,—The very illuminating article on "Industrial Finance in Burma" in your February issue ought to be an eye-opener to our local industrialists. It is notorious that they suffer from want of capital. The Government of Mysore have done much to aid them in the past, but what is required now is a scheme by which a free flow of capital may be made available for the starting of promising industries. Aids by way of exemption of rent and royalties, leases of land on favourable terms, exemption from taxation of profit of new undertakings and loans are all necessary. It is to be hoped that the subject will not be lost sight of immediately financial conditions permit of the subject being taken up for further examination.

20-3-25. *Industrialist.*

Member for Education in Mysore.

Sir,—The appointment of Dr. B. N. Seal to the position of Education Member of Council is a step in the right direction. It unifies control of Education in the State. To Dr. Seal's personal qualification for the high office to which he has been called, I need not refer. He does honor to the post; and the post is for once filled by an educationist of a high order. An educationist, as an Education Member, is truly to be welcomed. In the late Coalition Cabinet, Mr. Fisher filled the role of Education Secretary admirably, for he is pre-eminently an educationist. Though Dr. Seal is fully qualified for the post of Education Member, I see there have been murmurs of his appointment being an ill-conceived one, because he is already Vice-Chancellor of the Mysore University. There is no satisfying some people—they are so carping in their criticism of men and measures. Dr. Seal is above petty jealousies and personalities and he may be safely trusted to do the best for the State in the Educational line. There need not necessarily be any antagonism between the positions of the Vice-Chancellor and the Education Member. In Dr. Seal they are admirably combined and the fear of any conflict of interests is altogether groundless. Writing of Dr. Seal, I might add that he has recently declined the offer of the Vice-Chancellorship of the Dacca University on a higher salary, in order that he might serve Mysore to greater benefit.

Bangalore, *R.*
18-3-25.

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Journalism in India.

By the Editor.

The other day Mahatma Gandhi spoke on the subject of the duty of a newspaper Editor and in doing so remarked that it consisted solely in reflecting public opinion. The Rt. Hon'ble Mr. V. S. Sastri remarked at the same time that an Editor should guide public opinion. There can be no doubt that in India both the duties are important. An Editor who cannot contribute his very best towards the formation of public opinion in this country would soon find his occupation gone. Besides that, in a country like India, the creation of public opinion is a sacred trust and a newspaper Editor stands in a pre-eminent position for discharging this particular function. Where politics absorbs so much of our attention, it is but right that the genius of a newspaper Editor should be readily available for forming that public opinion which is necessary for the permanent advancement of the country. The leaders of any nation are among its thinkers, wherever they might be. The best thinkers in India, so far, have been among the foremost Editors of India. They have had the opportunities to study public questions and see which way progress lies. If they did not guide public opinion, then it would be hazardous to say who could. They have the opportunities to do so ; they have the ability to do so ; and they have the experience requisite to do so. Even Mahatma Gandhi falls into this category of Editors influencing public opinion daily. He is *first* an Editor and then everything else next. His influence in India is largely due to his position as the Editor of *Young India*. To reflect public opinion, however, an Editor should be able to gauge it properly ; and if he could, he certainly has the duty cast on him to guide it. He may not sometimes agree with public opinion as voiced in his own columns or in the gossip of the day, but it is just here that the duty devolves on him to guide public opinion on what he conceives right lines. Where Party Government prevails, Party newspapers might existand voice only Party views. One of the charges against Party views has been the stifling of the public conscience for the Party's benefit. In India, we have still to develop the faculty of right thinking on large public questions and it would be altogether a loss to the nation if a newspaper Editor did not feel it his duty to guide the public through his paper. It would be truly an organ of public opinion when he *makes* such public opinion, in the sense he moulds it along right lines. Public opinion is what the public should opine as just and equitable in a matter of public interest. Ordinarily the opinion of a newspaper Editor would not differ from that of the public he caters for, if the public had been as well educated as himself in the matter under discussion. In that sense, there can be no conflict between the views of Mahatma Gandhi and the Rt. Hon'ble Mr. Sastri. It seems to us that they have, each of them, put two aspects of the cardinal duty of an Indian newspaper Editor, which is to guide public opinion as much as to reflect it without fear or favour ! A newspaper of views cannot but have a policy ; that policy is dictated by the news it caters and is guided by it. If that is granted, there is no reason to think that a newspaper

Editor goes wrong if he attempts to mould public opinion on right—*i.e.*, what he conceives, in the public interests, right—lines.

It is not only in India that this question of the duty of a newspaper Editor is troubling the public mind. In England, a country in which public opinion is daily, nay hourly, formed, formulated, and circulated with a vigour which is, perhaps, without a parallel anywhere else in the world, with the possible exception of the United States, there are bickerings among the greatest Editors as to what a journalist may, or rather may not do, in politics. There is, in this connection, a delightful and appropriate passage in the new book *The River of Life* by Mr. St. Leo Strachey, Editor of *The Spectator*. The business of a journalist, he says, is to become impassioned in everything and so on nothing. "You cannot say this is impossible. Why! Mr. Black, Mr. White, Mr. Grey, and the Editor of *The Dictator* do it every week! It is their special power. They, of course, generally write on great themes, but like the great journalists they are, they can, if necessary, lead you breathless and flushed with interest through the Elysian Field of Nothing to the cloud-capped towers of the City of Nowhere!" "In a word," says the Editor of *The Spectator*, "the best journalist is the man who can become impassioned on the least provocation. He can make a cocktail out of a wine-glass of muddy water and a peppermint tabloid, and serve it iced in the Sahara."

Here is what Bruce Bliven says in the *New Republic*:—

"The most fundamental problem of all, for honest and intelligent journalism is, of course, the fact that nobody, broadly speaking, really wants the truth, though we all insist that it is our sole desire! The radical wants statements which support a radical point of view; the liberal wants liberalism and the conservative, reaction. It is a universal human failing to close our minds against information which does not fit in with our pre-conceptions. Your favourite newspaper is your favourite, quite as much because of the things it leaves out as those it prints."

Mr. St. Leo Strachey's "impassioned" newspaper-man typifies the average sensational critic in his own country. Even he apparently is intent on capturing the unwary public to his own views—mould their views so far and so much as to be indistinguishable from his own! As to Mr. Bliven's description of American journalism, it is, perhaps, not necessary to qualify it, for it is obviously spoken in earnest. Truth is the be-all and end-all of a good newspaper-man and if he cannot attach himself passionately to it, he cannot escape criticism at the hands of his discerning readers. He succeeds in moulding public opinion just in so far as he can reflect it in his own columns. The public, be it said to their eternal credit, are after all intelligent enough to see how far they are being told the truth in a matter of public interest and how far they are not. It is the supreme duty of a newspaper-man to see that he will not run away from the truth, be it ever so tempting to do so, for it is by the truth that he and his paper will be judged. If he devotes himself to the truth, there is no doubt that he will benefit himself as much as he benefits the public.

Journalists are like little dogs; whenever anything stirs they immediately begin to bark.—*Schopenhauer.*

Newspapers always excite curiosity. No one ever lays one down without a feeling of disappointment.—*Charles Lamb.*

It is to be noted that when any part of this paper appears dull, there is a design for it.—Richard Steele in the *Tatler.*

Ask my pen: it governs me;—I govern not it.—Laurence Sterne in *Tristrian Shandy.*

Of all the cants which are canted in this canting world, though the cant of hypocrisy may be the worst, the cant of criticism is the most tormenting.—*Ibid.*

The true Church of England, at the moment, lies in the Editors of its newspapers. These preach to the people daily, weekly.—Carlyle in *Signs of the Times.*

The newspapers of either side,
These joys of every Englishman.
—Andrew Lang in the *New Millennium.*

Krishnarajasagara Dam.

The Government of Mysore deserve to be congratulated on the promptitude with which they have investigated into certain of the criticisms about the Krishnarajasagara Dam. Whether true or false, they have attracted public attention and the best remedy that Government could apply has been the one of investigation. The *Communique* issued in the "Mysore Gazette" dated April 2nd, 1925, details the circumstances under which this investigation came to be had. It would appear that in view of the unprecedented floods that occurred in the Cauvery in July last, the Special Officer and Secretary to Government, Krishnarajasagara Works, submitted in December last proposals relating to—

(1) the revision of the maximum flood discharge of the river at Krishnarajasagara, and

(2) the stage at which the works may be stopped for the present after June of 1925, by which time diversion of the floods to the permanent waste weir is expected to be completed.

The revised estimates for the Dam were also before Government for orders.

Government accordingly appointed a Special Committee to consider and submit recommendations to them on the proposals made by the Special Officer as well as on the revised estimates pending before Government. The Committee have now submitted their report to Government on March 14th.

It would appear that, as definite decisions had to be arrived at on several important points relating to the Krishnarajasagara Dam Works, Government proposed to appoint in January last a Committee of technical experts for considering these matters and for advising Government on the same. Sir Frederick St. John Gebbie, Consulting Engineer to the Government of India, was requested to be Member and Chairman of this Committee, Messrs. Karpur Shrinivasa Rao and B. Subba Rao being the other two members.

The Government of India who were addressed through the Residency having agreed to depute Sir Frederick St. John Gebbie for the purpose and other members having consented to serve on the Committee, the Committee met on the 13th and 14th March 1925.

The terms of reference to the Committee were :—

A. In view of the unprecedented floods of July last, for what maximum discharge should the surplusing arrangements of the Krishnarajasagara Works be designed ?

B. In what stage should the reservoir works be stopped till need arises for larger storage for irrigation so that unproductive capital expenditure might be postponed till the canal works are taken up and have made sufficient progress ?

C. What maximum storage may ultimately be allowed in the reservoir consistent with the safety of the dam as designed ?

D. Whether the revised estimates submitted for the reservoir works by the Technical Officers are in order and may be sanctioned ?

Full and detailed notes explaining all the points relating to the above terms of reference together with the necessary plans, sections, calculations, estimates, etc., were forwarded for information and previous study to each of the members of the Committee. The points relating to the terms of reference detailed in the above notes were fully discussed and the conclusions arrived at are briefly noted below with the necessary explanatory remarks :—

A.

In view of the unprecedented floods of July last, for what maximum discharge should the surplusing arrangements of the Krishnarajasagara Works be designed ?

We have examined the calculations furnished to us relating to the unprecedented flood discharge of July 1924 and we think that the provision for a discharge of 350,000 cusecs proposed by the Special Officer, is quite suitable and ample, this being about 20 per cent in excess of the discharge of last year which is the highest during the past 100 years.

We have gone carefully into the question of the capacity of the surplusing works as set forth in the enclosed tabular statement and find that the surplusing works provided, *viz.*, the open weir of 1,200 feet with its crest at 106′ above bed and 16 sluices, each 10′ x 20′, 80′ above bed together are capable of discharging ultimately 344,527 cusecs with the maximum water level at 124 feet excluding 10,500 cusecs through the three scouring sluices at 50′ level which may also be opened as an emergent measure when floods exceed the limit noted above.

We think, therefore, that the surplusing works have ample capacity and that this capacity should be utilized by raising the masonry of the dam sufficiently high. The Special Officer points out that an additional weir length of about 800 feet can be arranged on the North Bank at a cost of about Rs. 4 to 5 lakhs. We agree with him in thinking that there is room for future enlargement of the weir works but do not think it necessary to provide for it in the estimates.

B.

In what stage should the reservoir works be stopped till need arises for a larger storage for irrigation so that unproductive capital expenditure might be postponed till the canal works are taken up and have made sufficient progress ?

Our recommendations in regard to the surplusing works go towards deciding this question. We think that it is necessary to raise the masonry to 128′ above bed level so as to have at least a margin of 4 feet above maximum flood level, thus leaving only 2 feet below the final top level of the dam, *viz.*, 130 feet, the cost for this top portion being about rupees 2 lakhs. It may appear that this expenditure could be postponed for the present but we think it undesirable to do so. The tram lines, mortar mills and other machinery are all now in position and we have no doubt that it will cost a great deal more than the interest charges on Rs. 2 lakhs to carry out later on this top masonry if postponed. We, therefore, recommend the completion of the work proposed in the estimate amounting to Rs. 217.18 lakhs bringing the top of the dam to 130′ above bed once for all.

C.

What maximum storage may ultimately be allowed in the reservoir consistent with the safety of the dam as designed ?

We have examined the profile of the dam for storing water up to 124′ above bed. Our attention was drawn by the Special Officer to certain Press criticisms and the letters of Mr. O. T. Dalal stating that a higher storage than 118′ should not be allowed. We have also considered the effect of the scours in portions of the rear face of the dam due to the overflow of water in the central gap. Sir Frederick St. John Gebbie, Chairman of this Committee, while inspecting these scours in September 1923, found by actual measurement that in only one case the depth of the scour was 3½′ and in other places the depth varied from 1½′ to 3′. But the dam as actually constructed has an extra thickness of 2 to 3 feet in the river bed over and above what the designed profile provides, and we have no hesitation in stating that the effect of these scours which all lie in the zone of extra thickness have in no way weakened the dam.

We find that the profile adopted satisfies fully the conditions of stability and stress required for a storage of 124′ and these compare very favourably with the corresponding provisions made for high dams in the Bombay Presidency, *viz.*, Bhatgar Dam and Bhandardara Dam, which are two of the highest in India. Also, the mortar used in the Krishnarajasagara Dam as indicated by the results of continuous tests, is of superior quality and the masonry is very sound.

We have considered Mr. Dalal's letters against a storage of 124′. He does not base his arguments on stress and stability calculations. If he had translated his objections into figures showing stability and stress and had compared them with the same figures for storage and similar figures for other Indian Dams, he would have found no room for any anxiety in the matter.

D.

Whether the revised estimates submitted for the reservoir works by the Technical Officers are in order and may be sanctioned ?

We have gone through the revised estimates placed before us. We recommend that the first set of revised estimates amounting to Rs. 217.18 lakhs net under direct charges providing for raising masonry to 130′ while leaving the weir at 106′ may be sanctioned.

We have also examined the second set of estimates for the ultimate stage of the reservoir works amounting to Rs. 251.32 lakhs under direct charges and the provision seems reasonable with the exception of Rs. 4 lakhs for a weir on the North Bank which may be omitted.

The following works estimated to cost about Rs. 30 lakhs and included in the second set of estimates may be postponed :—

(1) Provision of automatic gates to raise storage to 124′.

(2) Payment of compensation for land above 106′.

(3) Constructing the parapet wall on the top with approach works.

As the extra works of this estimate not included in the estimate one noted above would naturally be postponed for several years till the High Level Canal and tunnel works have made fair progress, estimates for such extra works will have to be revised according to the conditions obtaining at such future date.

Summarising, our recommendations are :—

(1) That the provision for a maximum flood discharge of 350,000 cusecs is suitable and sufficient./

(2) That the dam masonry be raised to 130′ as proposed by the Special Officer and only works relating to automatic shutters, parapet wall and compensation for land above 106′ may be postponed.

(3) That the profile of the dam, notwithstanding the rear scours which have been effectively repaired, has ample strength to store water up to 124′ above bed.

(4) That the revised estimates amounting to Rs. 217.18 lakhs providing for all works necessary to complete masonry up to 130′ level is in order and may be sanctioned.

The Report is signed by Sir F. St. J. Gebbie, Chairman, and Messrs. Karpur Shrinivasa Rao and B. Subba Rao, Members.

Land Mortgage Banks.

The scheme for the establishment of Land Mortgage Banks to relieve the indebtedness of small landholders in the Madras Presidency for which, as a beginning, an allotment of Rs. 2 lakhs has been made in the current year's Budget is being carried into effect by the Development Department. Provision is made for the opening of four such banks during the current year and one has already been established at Conjeevaram and has begun to work vigorously. Two are shortly to be opened, one at Kallakurichi in the South Arcot district and one at Ambur in the North Arcot district. Steps are being taken to open a fourth at Gudivada in the Kistna district. Each of these banks is receiving a Government contribution of Rs. 5,000 which will be supplemented by an equal contribution from the co-operative agencies. The jurisdiction of each of those banks will cover a radius of about 20 miles of the surrounding country. The Development Department contemplates bringing into existence at least two more banks during the current year in the hope that they would get some portion of the remitted contribution placed at their disposal for development purposes. Unlike the co-operative societies the Land Mortgage Banks will grant long-term loans extending over a period of twenty years to indebted ryots to redeem them from the hands of the sowcars. Now that a beginning has been made in this direction, the Minister for Development hopes to press on with the scheme and do everything in the power of Government to cover the Presidency with a net work of those Banks which, in association with co-operative credit societies, are expected to prove a boon and a blessing to the agricultural classes who are most often in need of timely financial help to tide over difficulties.

Co-operation in Mysore.*

By Mir Hamza Husein, B.A., B.L.

I feel greatly honoured that I should be called upon to open this District Conference, the first of its kind held in the State. I feel highly grateful to my friend Rajakarya-prasakta Rao Bahadur M. Shama Rao for his congratulations on my elevation to the highest office in the service of our beloved Sovereign, and for the appreciative manner in which he has referred to my services during a period of more than 32 years. A spirit of tender love and affection breathes through his speech and this is due to the fact that I have the honour of being his pupil, and I daresay, his pet pupil, during my college days at Mysore. He looks upon my advancement in the service with the supreme satisfaction and serene happiness of a guru at the success of his pupil, the credit of which belongs as much to him as to myself. His appreciation of my services at this juncture is highly gratifying to me as I have been of late very violently criticized by a certain section of the Press. I would not have made any reference to it as I have always acted on the principle of "Forget and Forgive" and even my worst enemy cannot charge me with being vindictive during my long official career.

"Arashe-Du-Geti-Tafsire-Ein-du-Harfast-
Ba-dustan murawat-ba-dushmanan mudara"

The happiness in both the worlds consists in two words—kindness towards friends and forgiveness towards foes. But as this is my last official utterance, I may be forgiven if I were to say a word or two in self-defence. The gravamen of the charge of my critics is that I was the President of the Recruitment Board and I entertain communal views regarding recruitment in the public service. It is no fault of mine if I was appointed President of the Recruitment Board. Whoever happens to be in my place will have to discharge the unpleasant duties of that office. The policy of Government being what it is, what is to be looked into and examined is the manner in which these onerous duties have been discharged—whether I have exercised my discretionary powers harshly or unsympathetically—and I can say, without fear of contradiction, that I have used my power to mitigate the rigour and hardship of the rules. As for my views, they are not new. I have not made a secret of them, but have openly expressed them in the course of my official career, and though these views were criticized from time to time (see the issues of the *Karnataka*) credit was given to me for the honesty of my convictions and no personal attack was levelled against me. But things have changed during the last ten months and I have been made the target of most violent personal attacks. I was the President of the Recruitment Board ere this for a period of four years and why this animosity against me should have suddenly blazed into a big fire ten months ago and I should have been made the subject of misrepresentations and vilifications unprecedented in the history of Mysore journalism, I am unable to understand.

Another subject of attack has been my Civil Service speech. I did not know until I read the criticism that it was a sin in a retiring officer at the end of his career to take a retrospect of his past work and to place before the younger generation such of the facts and incidents of his life that led to his success. One of my remarks about the legal profession has been entirely misunderstood and a friendly advice given by me has been taken as the condemnation of the whole profession. It is not necessary for me to enter into the merits of the controversy, but I must say that, though my remark might not have been happily worded, there was nothing farther from my mind than a reflection upon the legal profession as a whole.

I am glad to find from the speech of my friend Mr. M. Shama Rao that these narrow and petty views are not shared by you and that you look upon my work from a higher

* Part of speech delivered at the Opening of the Bangalore District Co-operative Conference on 28th March, 1925.

and broader standpoint, *viz.*, of patriotism and national interest. My friend Mr. Shama Rao has been a firm and staunch believer in co-operation and his interest in the movement has not flagged even after his retirement from service. He was the first Registrar of Co-operative Societies, and to him belongs the credit of having placed the movement on a sure and solid foundation. For a history of the movement, I must invite reference to the several addresses delivered at the Co-operative Conferences, the most notable of which was the one delivered by Mr. Shama Rao at the last Conference at Mysore. I would request every co-operator to read that address and every co-operative society to have a copy of it for ready reference. In that address you will find an epitome of the progress of the movement in British India and other advanced countries including Japan and in our State ever since its inception. The movement has made rapid strides in all the countries and its progress in our State, though not striking, is by no means discouraging. For the past five years the number of societies has remained almost stationary somewhere in the vicinity of 1,500 and the number of societies that are newly started is about the same as, or slightly lower than, the number of societies weeded out. In the beginning of the movement, when the principles of co-operation were not well understood, a number of societies were started with inefficient material with the result that they failed to function and became moribund institutions. The Registrar could not do better service to the movement than to weed out such bad societies. During the year 1923-24 he weeded out 113 such societies so that the number came down from 1,541 to 1,487. Of these the largest number is in the Bangalore District, *viz.*, 293, and taking the population of the District at 9,06,935, we have one society for 3,100 persons. That this process of weeding out has not adversely affected the co-operative movement is evident from the fact that the share capital and the deposits which are a sure index of the prosperity of a society, have considerably increased. Most of the societies are credit societies, but I am glad to find that a large number of them are doing the work of Agricultural co-operation. If I have done any service to this movement, it is this, *viz.*, that I suggested the combination of the credit with the Agricultural co-operation. The idea was taken up by my friends Mr. Ramiah and Dr. Coleman and both of them have made the experiment a great success. The other day I saw a credit society at Kunigal which has been doing splendid agricultural work. As our country is chiefly an agricultural country, co-operation should go hand in hand with agriculture and the Co-operative Department should keep itself abreast of all agricultural improvements and spread them into the country through the co-operative societies. The Co-operative Department has done a lot in spreading the cultivation of H22 Ragi. A similar duty devolves on them in spreading the cultivation of cotton H69. This new variety of cotton evolved after experimenting for seven years is a great improvement upon the ordinary variety grown in Mysore. It is finer in colour and staple and gives a larger yield per acre. The area under cotton is 1,15,000 acres. The increase in the yield is stated to be 5 maunds per acre, but taking it at 3 per acre and the average price at Rs. 6 per maund, the increase in the wealth of the country comes to Rs. 20,70,000. The Registrar of Co-operative Societies will, I hope, popularize this variety in the State through the Co-operative Societies.

Another thing that I want to see for increased food production is co-operative farming. It is well known and it has been repeatedly pointed out by the Dewan Mr. Banerji that the food production in the State is not sufficient to support its population and that the area under fallow increased in 1920-21 from 146,896 to 190,799 acres (I have taken the figures of 1920-21 as that was a normal year). In my address to the Agricultural Union in the year 1922, I drew the attention of the public to the decline in the extent of the area cropped in spite of the phenomenal rise in the price of food grains and asked 'is it due to want of labour or finance or to a desire on the part of the capitalists to acquire and retain more lands for speculative purposes than they can

profitably cultivate, and subsequent enquiries made by me show that it is due to want of finance—want of capital to employ labour. Co-operative farming will, I am sure, solve this difficulty. I want to see a sugarcane plantation raised on this principle. A beginning may be made with the depressed classes when new lands are given to them. If co-operative farming succeeds, as it has done in Denmark, then the question of the consolidation of holdings which has defied solution in our State up till now will also be solved.

There has not been much progress made in Industrial co-operation. Of all the forms of societies under this head the weavers' societies require the greatest attention, for weaving can be easily introduced into every household as a cottage industry. The present weavers' societies are more or less credit societies, which lend small sums to weavers who are at liberty to sell their finished product to sowcars outside the society. A society for the purchase of the articles produced by the weavers ought to be formed at once as also a store for the supply of raw materials to the weavers.

Some progress has been made with regard to depressed class societies but though separate societies may be required in the present condition of the depressed classes, I am not personally in favour of such separate and exclusive societies. It is a wholesome principle of co-operation that co-operative societies should have no politics. Similarly co-operative societies should have no caste or creed and should not be formed on denominational lines. The most attractive feature about co-operation is the moral force lying behind it. Liberty, equality and fraternity are the principles upon which the movement is founded and the creation of denominational societies contravenes these fundamental principles. In the beginning of the movement societies like the Daire-Islam Society at Chennapatna might have been started to give encouragement to the movement, but they are out of place now. Even if a denominational name is retained, the Department must insist upon the membership being thrown open to other classes.

But the disquieting feature of the movement is the large number of suits instituted and the number of decrees remaining unexecuted. In the year 1923-24, 1,859 suits were instituted and the number of decrees pending execution at the end of the year was 3,427. In a properly constituted society there ought to be no defaulters and there should, therefore, be no suits. It is stated that Raffeisen banks boast that neither member nor creditor has lost a penny by them and this ought to be the case with our societies if the principles of co-operation are properly understood. A great drawback in our system was that there was no organization to spread a knowledge of the principle of co-operation amongst the people and this defect has been remedied by the starting of the Co-operative Propagandist Institute. Mr. Shama Rao is entitled to our thanks for having taken great interest in the inauguration of this institute and I have no doubt, with the whole-hearted support of our popular Registrar, this institute will successfully accomplish the object for which it has been started.

If the people are firmly grounded in a knowledge of the principles of co-operation, the control of the Department can be easily transferred to non-official hands. Government are working towards this end and they have appointed five Honorary organizers with the status of an Assistant Registrar and if the measure proves a success, de-officialization of the Department can be easily accomplished at no distant date.

Government have recently passed an order sanctioning the conversion of the Provincial Bank into an Apex Bank. The Central Bank will be converted into an Urban Bank with power to lend to individuals only, throughout the State, but with this proviso that no loan should be advanced by it of a sum less than Rs. 2,000 to individual shareholders outside Bangalore City. This proviso is intended to prevent competition between the Central Bank and local credit societies. With the formation of an Apex Bank, I am sure, the condition of many a credit society will improve. Capital will flow to them easily when they are in need of the same.

The Restoration of the Gold Standard.*

By the Right Hon. R. McKenna.

When you asked me to address you on the gold standard you set me a difficult task. It is a subject on which a speaker is apt either to tease his audience with an exposition of the obvious or to perplex them by his obscurity, and I do not know which is less likely to be to your taste. I will do my best to avoid both, but it is only common prudence to make my apologies in advance.

You wish me to speak of the gold standard more especially in relation to the precise significance which its restoration would have for the traders and ordinary currency users of this country. If all you wanted were a mere expression of opinion I could give it to you in a very few words. I should say that the recovery of the gold standard will stimulate or depress our commerce according to whether the world's output of gold at its current value is above or below the world's demand. But an opinion summarized in a few words, however completely it may express what I have to say, is not what you want. You will wish to know the grounds for the opinion and I shall state them as briefly and as clearly as I can.

In reverting to the gold standard we shall leave behind us the currency system under which we have worked for the last ten years. It has been the system of a managed currency. We understand what a managed currency means much better to-day than we did ten years ago, but we are still very far from a thorough comprehension of it. Our natural conception of a sound currency is something which has a definite exchange value by reason of its convertibility into gold, and yet during the last three years our currency, with nothing more than an insignificant gold backing, has been more stable than the United States gold dollar and has actually appreciated in relation to it. This is a fact which we cannot ignore, and in considering what we may gain or lose in reverting to the gold standard we must not leave it out of account.

Currency Limitation.

What is the essential factor, apart from the quality of legal tender, which regulates the value of a currency? The answer can be very briefly stated. The value of a currency is regulated by the limitation of its quantity. It is obvious that the quantity of a currency may be limited in a great variety of ways, but for the purpose of our present discussion it is unnecessary to consider more than two methods. The first is by the control of credit, the method now used in England. The second is the one in operation under the gold standard, by which an obligation is imposed upon the issuing authority to hold some proportion of gold against the total note issue or against the amount in excess of a permitted fiduciary issue. Under the first system the Bank of England, as the final authority in regulating the volume of credit in this country, has unfettered control over the quantity of currency. Under the gold standard the control of the Bank of England is governed by the movement of gold.

In speaking of the limitation of the quantity of currency by the control of credit I am referring, of course, to the system as it is actually at work in England. In more than one country we have seen a direct issue of paper money to defray Government expenditure, but that has never been the case with us. Here the demand for additional currency springs only from the public. There are weekly fluctuations as wages are paid, there are fluctuations at holiday times and at certain seasons of the year, but the extra demand is only temporary and the additional currency in circulation flows back to the issuing authority when the demand has been satisfied. A need for more currency in permanent circulation can only arise from higher prices, which cause more currency to be carried in the pockets of the people and more to be kept in the tills of the shopkeepers. It follows that whatever control can be

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* Address delivered by the Right Hon. R. McKenna, Chairman of the Midland Bank, Limited, before the Commercial Committee of the House of Commons, March 4, 1925.

exercised over movements in the price level will also be effective in limiting the demand for currency.

It will be understood that in speaking of the price level I am not referring to the price of individual articles but to a theoretic composite price level of all articles in general consumption and use, the kind of measure we are familiar with in the index figures published by the Board of Trade. Price level depends upon the quantity of goods available for purchase, the quantity of money, and the rate at which money is expended. Thus one of the factors affecting the price level, and the one most subject to variation, is the quantity of money. Money consists of currency and, far more important in amount, of bank deposits. Whatever increases or diminishes bank deposits increases or diminishes money or purchasing power, and therefore tends to raise or lower the price level. It is at this point in the argument that the Bank of England appears. Bank deposits rise and fall according to the action of the Bank of England in lending or calling in loans, in buying or selling securities or indeed anything. It follows therefore that the Bank of England by its control over the volume of purchasing power can influence the movement of the price level, and as the public demand for currency varies with the price level the control of credit by the Bank of England can be used to limit the quantity of currency. That is the system under which we have worked and we cannot fail to recognize that it is one which throws a very great responsibility upon the central banking institution. To be managed efficiently the volume of credit must be so regulated from day to day and from week to week as to maintain stability in the currency and supply the needs of trade.

Credit and Trade Expansion.

Let us come now to what is required for the trade of the country. Our population is always increasing and our production should be continually enlarged. If the machinery of credit is to be adequate, we must have a slowly expanding total of credit and a slowly expanding amount of currency in order to carry the increasing volume of commodities. If credit is not expanded to meet the growing national requirements we cannot fail to have either an absolute drop in our price level or a fall relative to the movement of the price level in the rest of the world. It must not be overlooked that a reduction in the world's output of natural products arising from harvest failure or other causes may lead to a rise in the world price level and in that case our own price level notwithstanding some upward movement may still show a relative fall, a condition which would be indicated by a rise in the exchange value of our currency in relation to other currencies. A drop in the price level, whether absolute or relative, spells stagnant trade and unemployment, and it follows that the control of credit should be so exercised as to permit an expansion when internal conditions require it. If the volume of credit keeps pace exactly with trade requirements our trade will prosper and there will be neither relative appreciation nor depreciation of our currency, but the superhuman wisdom which so delicate a handing of the machine would need is, I am afraid, only to be found in theory. While I wish to express my sincere respect for the Bank of England and my admiration of the manner in which its authority has been exercised during perhaps the most difficult period in our financial history, I am constrained to think, looking back and with the clearer knowledge which always comes after the event, that after the deplorable inflation of the last years of the war and of the post-war period, the contraction of credit has been too severe to permit of a real revival of trade prosperity. The contraction has had its reflex in the great appreciation of our currency relative to other currencies but it has also had its reflex in relative stagnation of British trade.

Reversion to the Gold Standard.

But what has this discussion of credit control and the volume of credit to do with the subject of my address? You invited me to speak on the gold standard, and more especially on the precise significance which its recovery would have for the commerce of the country, and so far, though I promised to be brief, the gold standard has hardly

been mentioned. Still, if you will have patience with me, I think it will appear that it was necessary to give some explanation of our present system if we are to form a just opinion of the effect of a change to the gold standard.

I believe I am justified in saying that the settled policy of the Bank of England has been to effect a steady appreciation of sterling with a view to attaining parity with the dollar and the restoration of the gold standard. It is the policy laid down by the Cunliffe Committee whose recommendations were adopted by the Bank of England and the Treasury. But it is common knowledge that an appreciating exchange is injurious to export trade. Our exchange has been appreciating and the rise has been brought about in some measure by a contraction or insufficient supply of credit. When we are on the gold standard, further appreciation in relation to other gold standard currencies will be possible only within the limits of the gold points, and our export trade will accordingly benefit from the relative stability of exchange. The currencies of quite a number of countries, whether they are admittedly on the gold standard or not, now rise and fall directly in sympathy with the dollar, and in relation to the whole of these we shall be in a condition of practical exchange stability.

There is, however, a question of much greater importance for our trade than this. Will the reversion to the gold standard give us the means for an expansion of credit necessary to meet the requirements of expanding trade? We have to remember that the volume of credit will in the new conditions be regulated by the supply of gold. If the world's demand is in excess of the supply, there will be a drain upon us which we shall only be able to check by restricting credit. If the world's supply is in excess of the demand, so far from there being a drain upon us, there will be a natural flow of gold into this country, which automatically will expand the total of our credit. The questions then which we have to consider are the relation between the present supply of gold and the probable total of the world's demands, and the consequences to our trade of an excess or deficiency.

Gold Values, 1890-1913.

To illustrate my meaning I cannot do better than recall the history of our trade during two comparatively recent periods, in the first of which there was an insufficient supply of gold and in the second an excess. Most of us can remember that for a succession of years in the last decade of the nineteenth century prices were very low as compared with the preceding years, and trade was stagnant. I remember very well Sir William Harcourt arguing at that time the advantage of low prices for the consumer and the answer being made that the working man found no benefit in cheapness when he had no wages with which to buy anything. I do not attribute the whole of the trade depression which then existed to a shortage of gold, as there were other causes in operation, but undoubtedly the insufficient supply of gold to meet the world's requirements was one of the main causes of the contraction of credit, the fall in prices, and the stagnation in trade. The turn came with the development of the South African mining field and, after the interruption during the Boer War, the output of gold increased steadily year by year from 1901 onwards. If we look at the movements of the price level during the ten years after 1903 when the effects of the Boer War had passed away, we shall find that there was a rise of no less than 23 per cent, and if we examine the statistics of trade and unemployment during the same period we shall see that, with the exception of a temporary set-back due to the American crisis in 1907, trade was prosperous and unemployment was far below the average of the earlier period to which I have referred. Here then we had first a time, from 1892 on, of slowly appreciating currency, and later, for ten years after 1903, a time of slowly depreciating currency. The earlier period was one of stagnant trade and a high percentage of unemployment; the later, with the exception I have already mentioned, one of prosperous trade and full employment.

In calling your attention to these facts I should be sorry if I fell under the suspicion of being in favour of a depreciating currency. I am opposed alike to inflation and deflation,

Both are evils to be avoided, the one is unjust to the creditor, the other no less so to the debtor. I am in favour of a stable currency which alone can secure justice to all classes. But what we are discussing now is the probable effect upon trade of a return to the gold standard and I have reached the stage in my argument that when currency appreciates, credit contracts and trade is stagnant; and when currency depreciates, credit expands and trade is buoyant.

Future Value of Gold.

The point for us now to examine is whether, if we return to the gold standard in 1925, the conditions of the supply of gold and the demand for it are such as will lead to a resumption of the course that trade was pursuing down to 1914. Is there likely to be an excess of supply over demand, or of demand over supply?

So far as I am able to judge, I should say that the supply of gold at its present value is more than sufficient to meet the world's demands and that consequently we shall pass into a time of slowly rising prices, more active trade and increased employment. The world's output to-day is about £80,000,000 a year at par value. There is accumulated in the Federal Reserve Banks of the United States an excess of upwards of £300,000,000 over legal requirements. A considerable demand has of late been made from India, Germany and Australia, but these three countries cannot absorb anything like the total output. The demands in other countries will probably be quite small. It is possible that we may add some millions to our reserve here, but the United States will be a willing seller rather than a willing buyer. I cannot pretend to take anything more than a cursory view of the total of requirements, but with such materials as I have at my disposal I cannot come to any other conclusion than that the output is more than adequate to meet the world's demands. If this be the case, on balance gold will come to this country without our being obliged to attract it by high money rates. It will be bought by the Bank of England and, as I have already reminded you, every purchase by the Bank of England leads to an expansion of credit.

While I hold this opinion as to the final or permanent influence of a reversion to the gold standard I am by no means blind to the possibility and even probability that we may have many difficulties to encounter in the early days. The effect of our past policy in attempting to force the appreciation of our currency, whether by restricting credit, by charging higher rates for money than are current in the United States, or by discountenancing the issue of foreign loans in our market, has been to create a situation which may have a serious reaction when we first get back to gold. Large balances held here on American account may be sold with an immediate impact upon the exchange. The foreign issues which have been held back may be brought out with a rush. Our gold reserves may be jeopardized and high rates for money may be imposed in order to secure our position. Every step taken to enhance the value of sterling now must have its reaction at some later day. In these circumstances sterling exchange is at the moment in the same condition as the Stock Exchange when a heavy bull account is hanging over the market. But all these are matters only of temporary importance and we have to look behind market conditions to the long period trend of values. If we do so, I believe that reversion to the gold standard will eventually be attended by an influx of gold and an improvement in trade.

The Circulating Medium.

As you see, I have based my argument upon the relation between the supply of gold and the demand for it, and I have assumed that no new and exceptional demand will arise. It is often supposed that reversion to the gold standard will mean that the gold sovereign will once more pass into circulation. If this were allowed to happen I am afraid that it would be disastrous to our prospects. It is estimated that before the war gold coin was in circulation to the value of over £120,000,000. To-day at the higher level of prices the total required, if the Treasury note disappeared, would certainly be over £200,000,000. This would create such a demand for gold as would raise its value. It would be a serious shock to the Chancellor of the Exchequer, who would

have to pay for it, and it would be injurious to our trade, as it would immediately cause a fall in prices. The gold would be bought by the Exchequer and not by the Bank of England, and would not entail therefore any expansion of credit. The Treasury note is nominally convertible into gold, but this provision of our law has in practice been only a pretence, and the sooner the law is brought into conformity with the facts, the better for our safety. The indispensable condition of a true gold standard is that we should have freedom of export, so that when a demand is made upon us to pay our foreign debts in gold we can do so without leave or licence. Convertibility into bullion for export is one thing; convertibility of individual notes into minted sovereigns is quite another. Until we can afford it better than we can now, I would not risk any demand being made for gold merely for internal currency purposes. I venture to give my opinion on this point, but I recognize that it is a matter exclusively for the judgment of the House of Commons.

I began with an apology and I will conclude with another. In my desire not to take too much of your time or to weary you, I have made many statements far too didactic in form and without the qualifications and explanations which would be necessary if I were writing a book. However questions of currency value and the machinery of credit may affect trade, there are many other factors in operation which may counterbalance or accentuate their influence. The condition of Europe, taxation, efficiency of business control, labour question are all matters which have a serious effect upon trade. I have dealt only with what may be called the monetary side of the problem, but when we consider the problem as a whole, the monetary influence cannot be properly described as producing more than a tendency. But I believe this influence to be very important, far more important indeed than is generally recognized, and well worth the careful study of all who are concerned about the trade of the country. Interest in trade questions is a long and honourable tradition of the House of Commons and I feel greatly honoured that so important a section of its members should have invited me to address them on this subject.

South Africa and the Gold Standard.

Monetary problems are always of peculiar interest in the case of countries in a specially favourable position for acquiring the necessary basis for their currency and credit, whether that basis be gold or silver or exchange. In the case of South Africa, which produces half the world's supply of gold, the situation is rendered still more interesting by reason of its close economic and political ties with Great Britain, which is at present off the gold standard and probably not far from the point of being restored to the pre-war monetary basis. Various questions, such as borrowing facilities and exchange on London, are of vital consequence in connection with South Africa's monetary policy, and these matters have recently been discussed in an expert report rendered to the Union Government.

It was in October last that the South African Government invited Professor E. W. Kemmerer of Princeton University, U.S.A. and Dr. G. Vissering, President of the Netherlands Bank, to study the monetary situation in South Africa and to report on the resumption of gold payments. The text of the report has now been published and forms an exhaustive survey of the economic conditions upon which are based definite recommendations.

The Commissioners point out that although the monetary unit of South Africa bears the same name as that of Great Britain, the two currencies have as a fact been quite separate for several years past, and the view is expressed that South Africa is too small a country, economically speaking, to continue to conduct its affairs on an independent monetary basis. Consequently the alternatives are to link up with some other independent but more widely used currency, such as sterling, or to a universally accepted basis, such as gold.

One suggestion is rejected at the outset, namely, that South Africa should tie up to sterling with the reservation that in the event of the latter depreciating to 10 per cent below gold parity the connection should be abandoned. The Commissioners "hope and

expect to see sterling at parity with gold by July 1st next," but are sufficiently impressed by the scope of the fluctuations in sterling during the past six years and by the difficulty of halting inflation once embarked upon, immediately to reject any such scheme.

It was therefore necessary to decide whether sterling or gold should be the basis of South Africa's currency and to reach the decision with promptitude, seeing that the gold standard would be automatically restored by the expiry of the existing law on June 30, failing the introduction of new legislation. Furthermore, the Commissioners regarded it as imperative that the public should be informed at the earliest possible date as to the course to be pursued, so that ample time should be given for preparation. The Government should then stand by its decision, regardless of the course which sterling might pursue, and should itself assume any risks involved. It is worth while to note the pertinence of this recommendation to the case of Great Britain, where the gold standard will be automatically restored, failing further legislation, on January 1, 1926.

According to the reporting experts, South Africa is in a favourable position for the resumption of gold payments. For some months the South African pound has been very near gold parity and early in January was actually at a small premium in terms of gold. Further, prices are only one-third above the level immediately before the war, while in the United States they are fifty per cent higher and in Great Britain higher still. Consequently there can be no question of further deflation being necessary before reaching parity with gold. A third element is the strong gold position in the country. The Reserve Bank carries a 64 per cent gold reserve, the commercial banks hold heavy sterling balances, and the Pretoria mint is now in operation. There is, therefore, no dependence on London for the local supply of coin, and no likelihood of any serious depletion of the country's metallic reserves.

On the other hand, while sterling is considered likely to reach parity with gold at an early date, there remains the risk that another relapse might take place. Should this occur South Africa if tied to sterling would be compelled to follow Great Britain through inflation, deflation and uncertainty until the end of British monetary policy were finally attained. Consequently, arguing that as a general rule a currency based on gold is likely to be more stable than an independent paper unit, the Commissioners recommended a return to the gold standard in South Africa as from July 1st next.

It is claimed in the report that, together with greater stability in the value of money, interest rates would also be more stable and probably lower by reason of the reduction of the risk of a change in commodity values during the period of a loan. Greater stability would also be attained in exchange rates with the increasing number of gold standard countries. Foreign capital would flow into South Africa more freely on account of greater confidence in monetary conditions, and labour would be more contented with the removal of its suspicions of a paper currency. The mining industry would probably benefit from the encouragement which South Africa's return to gold would give to other countries to follow its example. A further advantage, which, though questionable in a highly developed country, may be of greater importance in one with a large uneducated population, is the superior convenience of gold coin over notes.

Having enumerated the benefits to be derived from the course recommended, the report goes on to deal with the disadvantages which may follow. Most important, there is the possibility that South Africa may experience a more favourable rate of exchange with Great Britain than has been customary in the past. Various factors must be considered, however, in off-setting this result, which is undesirable in view of the mutual importance of South Africa and Great Britain as markets for each other's products. First, the inconvenience can be only temporary, inasmuch as exchange troubles, in the shape of losses to importers or exporters as the case may be, can only arise while exchange rates and price levels are in maladjustment. No permanent advantage can accrue from a persistently high or low rate of exchange. Further, any

gain to the exporter by reason of a decline in the exchange value of the local currency must be balanced by a loss to the importer, and in the case of South Africa these parties are frequently one and the same, inasmuch as the leading export industries are under the necessity of importing supplies and equipment on a large scale. Then again, the difficulties of fluctuating exchange rates can largely be surmounted by contracts for forward purchases and sales of exchange. The Commissioners note the almost complete absence of such transactions in South Africa and suggest the desirability of traders introducing the practice of protecting themselves by this method. The Reserve Bank might assist in the development by itself entering into forward exchange contracts with the public and by supplying the commercial banks with cover when the transactions are too one-sided for them to hedge their position.

Another disadvantage which might accrue from the restoration of the gold standard arises from the fact that South Africa's loan supply comes almost entirely from Great Britain. It is commonly argued that South Africa might suffer by reason of changes in the relative commodity values of the local and British currencies between the time of contracting and repaying the loan, and between the date of obtaining the loan and the various dates when interest falls due. The Commissioners, however, point to the possibility that the probable relative movements of sterling and South African pounds would to some extent be discounted in the nominal interest rates charged for loans, and that South Africa's credit standing would be improved by a return to the gold standard. Nevertheless, the policy of borrowing in a country having a monetary standard different from the borrower's is recognized as involving considerable risk, and it is recommended that public loans should be cut as low as possible and should be conducted on a gold basis.

With regard to the objection that South Africa would be unable to maintain the gold standard independently of Great Britain, the Commissioners felt no anxiety on that point. They took the view that the newly-established local mint and the Reserve Bank, with its powers of note issue, rediscount and open market operations, together with the heavy domestic output of gold, should be adequate to cope with any expansion of credit which might conceivably occur.

Following the advocacy of its recommendations, the report goes on to make certain suggestions with a view to rendering the Reserve Bank more efficient in playing its part in the maintenance of the gold standard, once established. It is held, in the first place, that South Africa "does not offer an adequate field of operation for a Reserve Bank that is exclusively, or almost exclusively, a bankers' bank". In order to perform its duty in stabilizing credit conditions it should have the power to deal directly with the public, that is in the open market, a power which gives it in addition the opportunity of earning its expenses, with a profit for dividends or reserve, at a time when the commercial banks are making no demands upon it for accommodation. To this end the Commission recommend the amendment of the law governing the operations of the Reserve Bank in such a way as to broaden the scope of its contact with the public and to encourage the creation of an active market for South African Government Treasury Bills in the Union. These should again be issued by the Government, which, it is suggested, should gradually increase the proportion of its deposits with the Reserve Bank. . . . .

Following the receipt of the experts' report the South African Government announced that no steps would be taken to prolong the present monetary situation. In other words, as recommended by the Commissioners, the gold standard will be fully restored as from July 1 this year. It is not yet clear whether the Government intend to adopt the recommendations relating to the Reserve Bank, but should this be the case legislation will be necessary amending the Act of August 16, 1920. . . . Whether this step be taken or not, however, July 1 will see one more country—and that the world's leading gold producer—returning to the credit and currency basis which is the goal of monetary policy in almost every country forced at some time during the past ten years to abandon the universal pre-war standard.

The Bombay Labour Office and its Work.

The Labour Office of the Government of Bombay came into existence four years ago to-day (April 1) and it may be of interest to bring to the notice of the public those duties and activities of the Department which may not be generally known. The results of the enquiries undertaken into local prices and the cost of living in Bombay have been published and so have the statistics collected relating to wages, rents, etc. But these are only a few of the subjects under continuous investigation. The Labour Office deals with questions of even more far reaching concern and interest, for side by side with the enquiries into prices, wages, etc., in Bombay, Karachi, Ahmedabad, Sholapur and Poona, investigations into the economic and social conditions of various communities, etc., are being carried out by the Staff of the office.

The main line of enquiry into social conditions is the Family Budget. The collection of Budgets is an extremely laborious and difficult task in this as in all countries. The Labour Office employs for this work Lady Investigators, who visit chawls and tenements and invite the tenants to fill in printed forms. They get many more refusals than acceptances. When a form is accepted it is explained to the tenant and, in the case of illiterate persons, is filled in by the Lady Investigator after oral enquiries. In the case of literate persons it is left with the tenant, and called for after a few days. Generally several calls are necessary before it is received filled in, and then (in practically every case) a large number of corrections and additions have to be made by the Investigator. Usually she has to stand for this work for half an hour or more in a badly lighted corridor talking to the individual, who stands in the doorway of his room. The work is of the utmost difficulty and calls for a rare combination of tact and tenacity.

3,076 working class budgets were collected in 1921–22, and since then about 2,000 middle class budgets have been collected and are now being prepared for tabulation and report. The compilation of the data contained in such detailed family budgets as are collected by the Labour Office and their presentation in tabular form is a very big piece of work—much bigger, probably, than would be supposed by those who have not tried it.

In addition to the merely numerical statistics regarding Family Budgets the Labour Office is constantly engaged in enquiries into more general and less commensurable factors such as utilization of the workers' spare time, industrial welfare, health and safety of the workers, maternity benefits and all kinds of welfare work. Some of these enquiries are being carried out through the Investigators of the Labour Office itself. For some of the other factors, such as industrial welfare, the Labour Office relies on information supplied to it by employers, and by social and charitable organizations. Attention is drawn to the very full and complete statement of welfare work in three groups of the Bombay Mills which appeared in the September and October issues of the *Labour Gazette*. It is hoped that all groups of employers will ultimately allow the Labour Office to publish a continuous record of their activities and this will be of the utmost value in enabling the public to realize what steps are taken to protect the moral and physical conditions of the labouring classes.

Should unemployment become in India, as it may with the growth of industrialization and the increase of population, a vital issue as it is in Western countries, it will be part and possibly the most important part of the duties of the Labour Office to investigate the causes and extent of the evil and to publish reliable statistics concerning it.

The functions of the Office with regard to industrial disputes are not generally comprehended; very often it is looked upon as an arbitration agent. It is nothing of the kind. The sole aim is that by the careful collection of information and statistics relating to wages and hours of labour

in different industries and the cost and standard of living of the wage-earning classess, it may place itself in such a position that it will be able to supply contending parties with necessary statistical information and to be of use as a witness before any committee appointed to deal with industrial disputes.

Another very interesting branch of the work done is that which deals with the collection of Labour Intelligence pertaining both to India and to foreign countries. A considerable number of Indian newspapers are looked through every day in the Labour Office for labour intelligence, and it is the ultimate aim of the Office that no item of labour interest relating to the Bombay Presidency shall escape its notice. A complete file of newspaper cuttings is maintained. For the reception of International Intelligence the closest touch is maintained with the Labour Ministries, Statistical Offices and other similar organizations in the United Kingdom, United States of America, Canada, Australia, New Zealand, South Africa, France, Germany, Holland, Poland, Austria, Czechoslovakia, Italy, Switzerland, Japan, Belgium and several other countries and efforts are now being made to get in touch with all the remaining countries of the civilized world, so that the Labour Office as a receiving station for world labour news will be complete. In addition to the Ministries or Offices of individual countries there exists a very important International Labour Organization at Geneva, with which the Labour Office is in constant communication, and there are also numerous non-official organizations of labour parties such as the International Federation of Trades Unions and the like, all of whom send their publications regularly to the Labour Office. All these publications are looked through in the Labour Office and items of interest extracted from them for the *Labour Gazette*. Attention is drawn to the article entitled "Current Notes from Abroad" which appears at the end of each number of the *Labour Gazette*. This article is more complete than any previous article issued under the same name, and it is hoped to expand it until the article furnishes to the Bombay public a complete account of all items of international labour interest that have been received during the preceding month. It is believed that such international labour news is not available in a consolidated form in any Indian publication other than the *Labour Gazette*.

This is the organ through which the results of all this work are made available to the public every month. The *Labour Gazette* has been in existence since September 1921. In its present form the *Gazette* contains no fewer than 112 pages of reading matter besides miscellaneous information and advertisements, all of which is supplied to the public at the very low price of Re. 1 per mensem or Rs. 12 per annum, post free to any part of the world. The purposes of the *Labour Gazette* are to supply complete and up-to-date information on Indian labour conditions and especially the conditions existing in the Bombay Presidency, and to supply for local readers the greatest possible amount of information regarding labour conditions in the outside world. The *Labour Gazette* circulates to many different countries and is one of the few publications from which those foreigners interested in labour and economic conditions in India can obtain accurate and up-to-date information. Having regard to the enormous amount of misunderstanding regarding conditions in India which exists in the outside world generally the value of such a publication cannot be over-estimated. The fact that the *Labour Gazette* carries a substantial amount of advertising shows that it is regarded by the business community not as a mere temporary Government pamphlet but as a well-established journal valuable to advertisers. The number of subscribers is gradually increasing, and it is believed that, if the Legislative Council passes a Statistics Bill, and so puts the Labour Office on a more permanent and statutory basis, the number of subscribers, the body of advertising and the general usefulness of the *Labour Gazette* will be very materially increased. The *Labour Gazette* welcomes articles from outside sources provided that

they are based on sound observation and supported by actual figures.

Persons requiring information on labour topics are invited to make the fullest use of the Labour Office Library, situated in the Old Custom House, Bombay, which thanks to the generosity of the Legislative Council, which has allowed a substantial grant for the purchase of books, has now accumulated a very useful and fully catalogued library on labour, industrial and economic matters. It is now intended to publish in the *Labour Gazette* reviews of every book received and the leading publishing firms have been approached with a request that the *Labour Gazette* may be treated as a regular reviewing periodical. This has been accepted by some publishers and review copies have been received. If it is accepted by all (and there is no reason why it should not be) the Labour Office Library will increase much more rapidly and with no expense to the State.

It becomes clear therefore that the Bombay Labour Office, far from being an agency merely concerned with the collection of a few elementary statistics, has before it the very high aim of making itself a repository of all the latest information relating to labour, industrial and economic matters and that its chief desire is so fully to equip itself with such information that it will become the resort of all persons interested in such matters. It does not seek to become an arbitrator or to interfere in any way in industrial disputes, but rather to play the part of a helper by giving the contending parties every possible facility for the acquiring of facts which may further the satisfactory ending of their struggle.

A World's Forestry Congress.

Rome, March 1925.—By agreement between the International Institute of Agriculture and the Italian Government a Committee has been established for organizing a *World's Forestry Congress* to take place in Rome early in May 1926. The headquarters of this Committee are at the International Institute of Agriculture in Rome, and the Committee is composed as follows : *President*, Prof. Arrigo Serpieri, Director of the Royal Higher Institute of Agriculture and Forestry at Florence, Member of the Italian Government ; *Vice-Presidents*, M. Anders Fjelstad, Delegate of Norway at the International Institute of Agriculture and Dr. Alessandro Stella, Director-General of Forests and State Lands at the Italian Ministry of National Economy ; *Secretary*, Sig. Ariberto Merendi, Chief Inspector of Forests at the Ministry of National Economy ; M. Deoclecio de Campos, Delegate of Brazil at the International Institute of Agriculture, Sig. Gian Francesco Guerrazzi, Delegate of Irtalian Somalialand at the Institute and Prof. Asher Hobson, Delegate of the United States of America at the Institute.

The Congress will bring together experts in forestry and the timber and allied industries from all parts of the world, and it is hoped that truly valuable and profitable results will be reached through the exhaustive discussions, which are expected to take place on all those problems of Forestry which are of really international importance.

At the same time, in connection with the International Fair at Milan, there will be held an important exhibition of forest products and the machinery used in their conversion, which will enable visitors to examine the different products of the wood manufacturing industries and the wood working machines made in the various countries, and should serve to increase the flow of international trade in this important branch of commercial activity.

Various excursions to the more typical forest lands in Italy, and possibly in other countries, will be arranged to follow the work of the Congress.

The Congress is already arousing the warmest interest as it is considered to be the most important event in connection with Forestry and the allied industries that has as yet taken place.

Joint Stock Companies and Managing Agents.

By the Editor.

The Bombay papers are of late full of criticism about the doings of Managing Agents of public companies. The species of Agents, known as "Managing Agents", is peculiar to India, and what is more strange they are neither recognized by law nor vetoed by it. The Indian Companies Regulation knows them not. The defect of the present law is that it countenances their existence in a way which it would not tolerate if it knew the actual extent of the powers exercised by them in the governance of public companies in this country. The extraordinary position assumed by 'Managing Agents' in connection with the management of Cotton Mills in Bombay is referred to by the *Bombay Chronicle*, for instance, in a manner which ought to disillusion the guileless public and make them realize to some extent at least the iniquities to which they might be subjected by a system of management over which the law has laid no restraint.

The *Bombay Chronicle* in commenting upon the causes of the depression in the Bombay cotton textile industry draws attention to the "Managing Agency" system and urges reform in the management of the cotton mills which is necessary if "ultimate total destruction is to be avoided". This reform is to "take out of the inefficient hands of family corporations of managing agents the actual control of enterprises that demand experience, personality and a capacity for hard work". It points out a number of evils injurious to the development and prosperity of the cotton industry to which the system has given birth and then observes :

> Managing agencies have been hawked about, mortgaged and sold as if they were privileges instead of being recognized as responsibilities. The previous promise for the grant of one concession or another in respect of brokerage or the like has been utilized to get control of mills in a weak position. Whatever may have been the merits of the original pioneers who started mills in Bombay, in the second and, in most cases, in the third generation now in this city inefficiency is writ large on the management of almost every firm of mill agents. The application of the hereditary principle in the control of industry has been carried to an extreme, which must bring serious consequences in its wake. Any man associated with the army would faint if he were told that the little son of the general was going to succeed in command the man who shouldered the responsibility at the top. The principle of hereditary monarchy has already been shaken to its very root throughout the world and the evils of hereditary priesthood have been the cause of more than one revolution in different countries. But where the matter affects the well-being of a nation, the incentive to saving and the lives and the wage-earning capacity of several hundred thousand men, it is preposterous that conditions which have already proved so damaging, should be allowed to continue. We are not suggesting a wholesale destruction of vested rights, but we think it is high time that the shareholders who have put their money into the textile industry and who must see unless they are absolutely blind that all this capital and organization are crumbling to pieces, did a little thinking and tried to see to what extent and in what manner efficient management of textile factories could be secured either by the abolition of the system of managing agents or by some radical modifications of it.

The *Chronicle* states that the "full reactions of this vicious system have reached a stage which should be a disgrace to the commercial morality of any city". After describing the nature and extent of this corruption it remarks : "A ghastly network of inefficiency and corruption has thus grown up round the textile industry and has made it unable to stand on its legs in a period of stress and still people wonder how Japan, who takes cotton from this country, can supply cloth cheaper than mills buying cotton on the spot and selling their cloth here." It may be, as the Allahabad *Leader* suggests, that the *Chronicle* has taken an unduly gloomy and one-sided view of the state of affairs. It may be that no useful purpose can be served by magnifying the extent of the abuses that have crept into the "System". The Bombay cotton mill industry would not have developed to the extent it has done if the picture of corruption and inefficiency drawn by the *Chronicle* were a wholly faithful one. This, however, does not mean that there is not a substratum of truth in what it has written. The *Times of India* some time ago also advised the millowners to put their house in order. The *Indian Daily Mail*, which has been warmly espousing the cause of the millowners, admits

the existence of abuses which injuriously affect the industry when it writes that "the Augean stables of the cotton mill industry should be cleansed" and that "if the shareholders expect profits, under the conditions that will probably obtain for the next decade, they should apply themselves to the task". It is the duty of shareholders in their own interests as well as of the country to see that the canker which may be eating into the vitals of the industry, as the *Leader* well puts it, is removed as quickly as possible, so that it may be able to hold up its head in adverse conditions and successfully meet foreign competition.

The Cotton Mills apart, the remedy for the state of affairs described by the *Bombay Chronicle* will be found in the history and development of "Managing Agency" in India. "Managing Agents" are unknown to Company Law and Companies in England, America, and the Colonies; they are a species which the course of events in India has brought into existence. If they are more powerful than "Managers" or "Managing Directors", who are "Agents" in law of the Company which they manage, and more powerful even than the Directors of the Company or the Shareholders of the Company, it is because the law in India has allowed them a latitude which is truly phenomenal. In the earlier days, when the system of "Managing Agents" was still in its infancy, "Managing Agents" brought personal skill, expert knowledge and money into a concern and brought it to fruition. They put a large deal of the capital required into the business; they also took the shareholders' money but it was only to get the additional capital required. The present position is somewhat different or to put it point blank, rather the reverse. They have gone the complete circle—they often do not put any money into the concern; often they possess no personal skill and as for expert knowledge they can bring to bear on the business, the less said the better. The result has been as it deserved to be; all round losses; the turning down of Directors into mere tools of "Managing Agents"; and the Shareholders into gazers-on of the drama that is being enacted before them. The position is truly too pathetic for words. That the trend of the position was clearly observed some time back is well borne out by a writer in the "Round Table". He wrote thus not long ago in the course of an article on the commercial and economic situation in India, in that well-known Magazine :—

No account of Indian industry would be complete without a reference to one of its peculiar features, the Managing Agency system, which appears to be dying out in Bombay, but still flourishes with some vigour in Calcutta. The system has had its advantages in the past and still has some, but there can be little doubt that from the public point of view they are outweighed by the disadvantages. With the advent of joint stock companies, the large trading firms established in India began to look to the public for money for specific enterprises, especially those of a speculative nature where the firm would prefer the risk to fall on others; at the same time, they wished to preserve a portion of the profit for themselves without taking any direct financial interest in the company. On the reverse side, there were often promoters of small ventures who were glad of the backing of the name of one of the large firms and who saw material advantages in linking the large organization with their own. The outcome was the Managing Agency system.

The system is loose in its application and the position of the managing agents varies from that of secretaries to that of managers or directors; but in practice the managing agents direct the directors, administer all the concerns of a company, and in some cases they have been actually known to take power in the Articles of Association to dispense with directors altogether. They generally get paid a fairly substantial fee, usually a fixed minimum with a commission on profits; and the incidental profits from the ability to manipulate the finance of the various companies under management are very large indeed. In return for the fee, the managing agents, in addition to the performance of their prescribed functions, generally provide free office accomodation, etc., the arrangements varying widely in the different companies. The companies benefit to a certain extent by expert, but not always disinterested, advice, which they would otherwise have had to pay for or forgone, and they gain a certain amount from the goodwill of the managing agents' firm and have their resources to fall back upon in a crisis, but there can be little doubt that the general results of the system, as usually administered, are injurious to the companies under it, though there are many honourable exceptions. It is difficult to see how the results could be otherwise, as it is impossible for a firm of managing agents to reconcile their fiduciary positions in regard to several companies when the interests of any of them are opposed, as they very often are.

This difficulty is not eliminated by an appeal to the several directors, as the bulk of the directors are generally "ex-officio" representatives of the managing agents or are their nominees and

it is rarely that an independent board is secured. The regrettable tendency among the less scrupulous firms is to regard the company as a goose to be plucked, mismanagement is concealed where possible, and the interests of the public are flagrantly disregarded. This is a severe indictment of the existing system and though it must not be taken to apply universally, it certainly is justified in many cases.

One of the most encouraging signs in the present situation is the tendency of public opinion, as representing the shareholders, to assert itself by taking such steps as are legally provided for looking after their rights. The matter is of greater importance than may at first appear, as the future of Indianised industry must largely depend on the traditions and training received from the present holders of the industrial reins. Looking at the situation from this aspect, there is cause for anxiety. The truth of the matter is that in the past in India money has been so easy to make that many large concerns have never been driven to the necessity of adopting sound business principles, conservative methods of finance or even a proper regard for their own ultimate interests: and incompetence and shady methods have too often been rewarded with large profits and the safety of retirement to another continent. If an *a priori* suggestion might be made as to the probable weak point in Indianised industry, it would be this very lack of responsibility in the direction and control of business; and with the existing examples to follow it will be difficult for the new classes of educated Indians, who are to be attracted to business with the industrialization of India, to keep before their eyes that ideal of responsible public service which is the first requisite of any form of joint-stock management.

Without therefore looking further ahead than the present, it must be emphasized that the first condition of any real industrial progress in India is the strict enforcement and if necessary, revision of the Indian Companies Act. Managing Agents, who are not mentioned in or apparently contemplated by the Act, are generally legally treated as directors or secretaries according to their status and powers. But their very wide powers require strict definition and curtailment, their tenure should be subject to various legal safeguards, and the question should be seriously considered as to whether in the interests of the public their existing position and privileges should not be made illegal, and provision should in any case be made for a substantial share qualification and the disclosure of interests; and in addition to such amendments the general administration of the Act requires stiffening.

The Act no doubt has been stiffened, but the question of legalizing the position of "Managing Agents" has been altogether neglected. There should, in our opinion, be a share qualification in their case; they must subscribe at least 33⅓% of the capital required for the business for which they desire to make themselves "Managing Agents". Next, they must not be allowed to handle the money of the Company paying interest for it, as they have all along been doing. They are to-day their own Treasurers. They should, in our opinion, be interdicted from acting as their own Treasurers. This would prove a wholesome restraint. The interest agreed to be paid goes the way of the principal amount, which they often use for purposes other than those of the Company. This should be made altogether impossible for them in the interests of the concern itself. The principle of banking the Company's money would, in such circumstances, become more and more automatic, as it well ought to be. At present, the position is such that Banks are approached by "Managing Agents" only for purposes of accommodation and no more. This ought not to be. The interest rate often is 6% per annum; this being lower than the prevailing rate, the temptation to use the money of a concern for other purposes is very great. The position of "Managing Agents" should **legally** be reduced to Secretaries proper of a Company; if a Company so chooses it might appoint a Managing Director and charge him with the duty of carrying out the work for which Managing Agents now make themselves responsible. Their representation on the Board of Directors should be *limited* strictly and they should not, in any case, be allowed to swamp the Board and reduce it to a position of impotence, as it is not infrequently the case now.

The disclosure of interests can easily be more strictly insisted on as secret clauses enabling appropriations of money are not infrequently part of the powers enjoyed by "Managing Agents" now. This right to appropriate funds should be legally restrained in the interests of the general body of shareholders. Publicity is the first requisite in a public company and the present position is such that "Managing Agents" are wholly privileged to avoid it. It is to be hoped that this question of amending the law in regard to "Managing Agents" will be earnestly taken up and pushed through the Indian Legislative Assembly without delay.

Education's New Phase.

"Some weeks ago I was given the opportunity to comment on the steps which were being taken by the National Assembly of the Church of England, with the concurrence of other denominational bodies, to find some better way of dealing with the question of religious education than the existing system of dual control", writes J. Phillip in the *Daily News*. At that time the Assembly had only succeeded in arriving at the very general principle that there should be unity of administration with variety of type. Since then, however, their Education Commission has been engaged on working out the practical application of this principle and a report embodying the result of its labours has just been made public. This report was received by the Assembly last week, but was not discussed.

It has been no secret for some time past that financially the bodies responsible for the maintenance of voluntary schools are coming to the end of their tether. But for the war and the lean years following, which cried halt to all developments, the crisis would have arisen long ago.

It is only in the last few months that the Board of Education has started to issue lists of schools which are condemned either as beyond repair or as in immediate need of large and expensive renovations. Those who are familiar with our elementary schools will not be surprised to find voluntary schools figuring very prominently in these "black lists", nor will they be impressed by outcries even from the most venerable quarters against the harsh sentences of the Board. They will know from experience that things must be very bad indeed before the cautious gentlemen at Whitehall will face the united forces of "economy" and religion. We may rest assured, therefore, that in the interest of the children it is time, and more than time, that these buildings were condemned.

In rough outline, the scheme which the Church Assembly has under consideration is as follows: All schools are to pass under the general administrative control of the Local Education Authorities; but for the supervision of religious instruction local religious education committees are to be set up, the majority of whose members shall represent the denominational interests of the area. After ascertaining—by registration of the wishes of parents—the numerical strengths of the various denominations, the Authority shall allocate its schools according to denominational needs. Each school will have a body of managers, and where a school is allocated to a particular denomination the majority of the managers must be representative of that denomination. Where it is not practicable to allocate a whole school to one denomination—*e.g.*, in what are known as "one school" areas—arrangements may be made for various forms of denominational instruction to be given in the same school by suitably qualified teachers.

With regard to the appointment of teachers lists of suitable persons are to be prepared by the Authority, out of which the Managers shall recommend to the Authority two or more names for every vacancy. Finally, the Authority is to undertake the responsibility for the upkeep, repair and extension of all buildings, but in the case of voluntary schools these shall remain the property of the present owners, who shall have the right to use them when they are not required for educational purposes. These are the most important proposals contained in the report.

One does not need to be a pagan, an agnostic, or even anti-clerical, to get the impression that the Churches stand to gain much and lose little if these proposals are adopted. The registration of parents, for instance, offers a particularly favourable opening for denominational enterprise; but who will canvass the undenominational parent? Then, again, the elaborate mechanism for the selection of staffs makes for the retention and extension, rather than the discontinuance, of the religious test, which so many teachers resent as out of date. The chances of educational efficiencies being subordinated to other considerations are still greater in the case of a school where several types of denominational instruction are given by suitably qualified teachers.

Clearly, when the teacher who gives a particular form of denominational instruction leaves, it becomes the primary concern of the Managers, in appointing a successor, to secure a member of the same denomination. The other subjects are bound to suffer from thus limiting the field of choice.

There will also be some difficulty in convincing the undenominational public that their money should be spent on improving or extending buildings which remain the property of private owners. From the administrative point of view any scheme that multiplies committees requires a great deal of justification, while the proposed procedure for appointing a teacher is calculated to make even a bureaucrat tremble.

And at the cost of all this trouble, what will the children stand to gain ?—three-quarters of an hour's instruction per day in the details of Christian disunion. I do not wish in any way to minimize the importance of religious teaching, but even if it were generally conceded that to be a Christian at all one must be some kind of denominational Christian there would still be room for doubt whether children of elementary school age are capable of understanding the real points at issue between the denominations. It may, of course, be urged that religious convictions do not come so much by intellectual processes as from a habit of constantly reacting to a particular kind of religious atmosphere. To create this atmosphere may be the function of dogma and the justification of ritual, but in my opinion it falls outside the sphere of public education.

There is bound to be opposition from many quarters, and for many reasons, to the segregation of children by denominations which the adoption of these proposals would involve. It is a pity that a promising beginning should be spoiled and the chances of a real agreement vitiated because zeal has been allowed once again to obscure all sense of proportion.

The Imperial Forestry Institute.

The past year has seen the beginning of what should prove to be a great development in Forestry training and research, with the establishment at Oxford of an Institute which will be known as the Imperial Forestry Institute, a title adopted at the command of His Majesty the King.

The question of establishing a central training institution was first discussed by the British Empire Forestry Conference in 1920. This Conference felt that, owing to lack of funds and dissipation of effort, training in the higher branches of forestry for the needs of the Empire was nowhere as complete or efficient as was desirable, and therefore recommended the establishment in the United Kingdom of one institution which should undertake the higher training of forest officers and should also be a centre for research into the formation, tending, and protection of forests. An impartial Committee, consisting partly of representatives of Government departments concerned and partly of experts, was thereupon appointed to make recommendations regarding the location and organization of such an institution, and other matters. After visiting the Universities of Oxford, Cambridge, Bangor, and Edinburgh, and also taking evidence from other Universities, as well as from Institutions and Societies interested in forestry, this Committee issued in 1921 a report which recommended the establishment at Oxford of a central institution for the higher training of forest officers, for training in research, for the provision of special and 'refresher' courses for officers already serving, and for the conduct of research into forest production. The report made it clear that there was no intention of interfering with the work done by the various University Schools of Forestry, and provided the training of these was maintained at a required standard, selected students from any such schools would be eligible for admission to the central intitution. Full details will be found in the Report of the Interdepartmental Committee on Imperial Forestry Education, 1921 (Command Paper 1166).

Further action was suspended until 1923, when the proposals of the Interdepartmental Committee were considered by the British Empire Forestry Conference in Canada. The

Conferece supported them in the strongest terms, and they were subsequently endorsed by the Imperial Economic Conference held in London the same year. Arrangements have accordingly been completed for starting the Insitute in October 1924.

The Imperial Forestry Institute will be a University Institution, the Professor of Forestry being its Directors. It will be under the control of a Board of Governors representing the University and Government Departments concerned, under the Chairmanship of Lord Clinton, a Forestry Commissioner. The educational work of the Institute will comprise (1) post-graduate training of probationers for the forest services and of other qualified persons, (2) training of research officers in special subjects, and (3) provision of courses for selected officers already serving. It is intended that the Institute should maintain close touch with and be of assistance to the various forestry training centres throughout the Empire. Thus, in the case of overseas training centres which have no direct means of giving practical instruction in the lastest systems of mangement as practised on the continent of Europe, it will be one of the functions of the Institute to arrange for such practical instruction to be given by members of its own staff to students who have already completed their general course of training at their own Universities or Colleges.

If, in any particular case, it cannot undertake to give direct instruction, the Institute may arrange that this should be given at some other place. It is proposed, for instance, that close touch should be maintained with the Royal Botanic Gardens, Kew, whose unrivalled resources should be of great assistance to those students who may wish to study systematic botany and economic products. Again, forest engineering is a subject which cannot be dealt with comprehensively in Great Britain, owing to the absence of logging operations on a large scale; arrangements will therefore be made as far as possible to study it practically in the forest regions of the Continent, or in certain cases in Canada. Similarly, the study of tropical silviculture from the practical point of view is impossible outside the tropics, and hence the Institute will maintain close touch with other institutions where this subject can be efficiently dealt with, such as the Forest Research Institute and College, Dehra Dun, in order that the best possible arrangements may be made in the interests of students who wish to make a practical study of tropical silviculture.

Although the Institute is intended primarily to serve the needs of Forestry in the British Empire, it will be open to qualified students of any nationality provided that there is sufficient accommodation. Nor is it by any means intended that it should cater only for the requirements of State forest services; now that timber and wood-pulp firms are becoming more and more interested in the management and working of forests on scientific and economic lines, the Institute should be of special value in providing them with fully trained employees. Students, admitted to the Institute may, in fact, be included under any of the following categories :—

(*a*) Those possessing a Degree in Forestry, or a Diploma or equivalent certificate of having satisfactorily completed an approved course of training in forestry, who have been selected as probationers for the higher branch of some forest service.

(*b*) Graduates with Honours in Science, who desire to become specialists in some branch of work connected with forestry.

(*c*) Forest Officers deputed to attend courses with the view of bringing their professional knowledge up to date.

(*d*) Students of approved qualifications not included in the first three categories, who are admitted on the recommendation of overseas governments.

(*e*) Students with a University training in forestry who may wish to attend the Institute on their own account and at their own expense.

The course of study at the Institute will normally extend over one academic year, beginning October, and will be made sufficiently elastic to serve the needs of individual students. The subjects dealt with will cover the whole range of Forestry, and will include Silviculture (European and Tropical), Forest Mangement (including Mensuration, Valuation, and working plans), Forest Botany

(including physiology and anatomy of trees, mycology and pathology, ecology, and systematic botany), Forest Zoology (including entomology), Forest Utilization (including the structure, properties, and uses of wood), Soils, Climatology, Forest Economics and Policy, Forest Law, and Forest Engineering including Surveying.

Temporary accommodation for the Institute has been arranged, but a more suitable site and larger buildings will be necessary, and the formidable task of obtaining funds for the acquisition of a site and the erection of buildings will fall on the Univerity. The requisite sum for this purpose will be far beyond the means of the University to provide, but a building fund is being started, and it is hoped that this great undertaking will not suffer from lack of support on the part of benefactors who have at heart the welfare of the Empire in general and the cause of Forestry in particular.

PROGRESS IN FORESTRY IN U.S.A.

"The past two years have seen notable progress in public appreciation of the necessity for making the timberlands of the United States continuously productive," said R. S. Kellogg, Chairman of the National Forestry Program Committee, speaking before the Annual Meeting of the Society for the Protection of New Hampshire Forests, "and tangible results are being steadily achieved upon the basis of federal leadership and co-operation with the States. Despite the very proper efforts at Washington to reduce expenses, Congress made a substantial appropriation last spring for the continuing of purchases of land for national forests in the east, because it was recognized that such purchases are not an item on the expense side of the national ledger, but are really and truly an investment in the future welfare and prosperity of the entire country. More than to any other one influence in credit due to the Society for the Protection of New Hampshire Forests and its untiring Forester, Philip W. Ayres, for keeping this viewpoint before the people until Congress could not escape its duty to make the purchase policy a fixed feature of the national budget. Purchases since the inauguration of this policy in 1911 have exceeded 440,000 acres in the White Mountains and 1,600,000 in the southern Appalachians and there are still large areas upon the watersheds of navigable streams which must be protected by the extension of this policy of conservation through wise use of our natural resources.

"The problem of our timber supply is a many-sided one," said Mr. Kellogg. "The magnitude of it is so great as to require the utmost practical efforts of the States and of the National Government for years to come, in order that our 400 million acres of potential forest land may permanently yield the quantity and variety of products required for a nation at present numbering 100 million souls, and which the children of to-day may see grow to 200 million.

"There are four cardinal points in any adequate program on forest conservation. These are: First: Fire prevention, which is an absolutely essential requirement for the protection of the existing supply of mature timber and of the young growth which will furnish the timber of a few years hence. No other forestry measure, however desirable, can be carried out until protection from fire is assured. Second: Forest planting upon a greatly enlarged scale is necessary, in order to restore millions of the acres of barren land to productivity. Third: Forest research and investigation must be maintained and enlarged, so that we may determine the best methods of reproducing the most valuable species and the most economical means of utilizing all species. Fourth: Purchases of forest land by the National Government by the States and Municipalities must be continued until our nucleus of national forests originally created by the withdrawal of public lands from entry or sale is brought up to a total of publicly owned forests, comprising not less than 35 or 40 per cent of our total forest area. This is necessary not only for the protection of watersheds but also to furnish the backbone and reserve of the nation's timber supply, for only through publicly owned forests will it be possible to grow an adequate amount of the larger sizes and older timber which must always be an essential part of our supply.

Civic Life and Education.

In his book, the "Permanent Values in Education" Kenneth Richmond says: "If the civilization of to-day is sick and ugly and restless with materialism it is largely for lack of that high power of fruition," which the ideals of ancient education inculcated in the minds of ancient youths. To understand this it is worth while to consider the ancient civilization of Greece and Rome and how far cultural influences were at work. The ancient Greeks realized and enjoyed beauty in all its aspects. It is said that the education of the ancient Athenian citizen was liberal in character and general in its nature. It had a specific object in view, namely, to defend and govern the City States. To the Romans again civics formed an essential item of their education from the cradle to the grave. The boys grew under the influence of their mothers' care who were hence responsible persons in the State. The splendid identification of mother and motherland so magnificently realized in Hindustan, as is evidenced by a Sanskrit passage beginning "Jananie Janma Bhumi Cha Swargadapi Gariyasi," *viz.*, mother and motherland are greater than heaven itself, was, in a different degree, realized by the Romans. Love of country was their ruling passion, and pride of nationality was their governing motive.

Coming to our own times we are confronted with a multiplicity of educational systems. Most of them lack even in essentials. And proposals of reformation are not doubt in the air. Time alone could judge how far healthy transformations could be effected. James Bryce says excellently well: "Each member of a free community must be capable of citizenship. Capacity involves three qualities—intelligence, self-control and conscience. The citizen must be able to understand the interests of the community, must be able to subordinate his own will to the general will, must feel his responsibility to the community and be prepared to serve it by voting, working or (if need be) fighting." It is evident that most of our modern States fall short of these remarks. For both the "purity of the Government" and the conscience of private citizen are indeed questionable.

Influence of Mammon in the daily life of to-day is potent to such an extent that bribery and corruption are common in all the world transactions. There is a strong tendency on the part of the individuals to become millionaires, and outshine their neighbours. The majority of the people are indifferent towards politics agitating the country, and most of them are actuated by rank selfishness, vainglory and ambition. And the State is nothing but an association of several individuals. It is money power that counts now-a-days in politics. The blame for this state of affairs should indeed be laid at the door of the prevailing educational systems. J. C. M. Garnett, the author of "Education and World Citizenship" speaks of aimlessness as an outstanding feature of the present system of education in England. Its continuance would not be conducive to public welfare, and hence to arrest its progress, reformation in right lines should be speedily effected. Perhaps a better, saner system of moral education would tend to bring about the longed-for fruition.

We are told that such anticipations have materialized to a large extent in Switzerland and Japan. But yet they are not ideal models to copy from. The Japanese are fixed by glowing ideals of duty and self-sacrifice for the sake of their country. And in Switzerland the preservation of civic culture, says Felin Benjom, is one of the chief services which the cantons perform for themselves and for the confederation of which they form a part. This betrays distinctly enough that the Swiss are in possession of more or less rich and wholesome education which does a great service to the cause of the State or the community at large.

In America,—lately emerged into the sunlight of freedom—the great ideals of education are conspicuously absent. They are still said to be in an incipient stage, and are yet to be brought to perfection. Thus a study of some modern countries reveals

the fact that the educational advancement in the right direction is not in keeping pace with other progressive lines, industrial, political, etc.

The future of the world-progress depends largely on education and education alone. To this end educational preparation and religious training are recommended. The first is a means to acquire intelligence while the latter is valuable in the acquisition of self-control through peculiar training of mind. These means help a long way to producing true and perfect citizens. The existence of such citizens in a State tends towards an easy realization of purely democratic ideals. We conclude with the words addressed by the Great American Moralist Channing: "Many things and great you lack:—The remedy is not in the ballot box nor in the exercise of your political rights: it is in the conscientious education of yourselves and of your children." The sooner this is realized, the better, happier and more glorious will the world be!

Co-operative Movement in Bombay.

The progress of the co-operative movement like almost every other movement, social or economic, depends upon the nature of the agricultural season. Its development during the year 1923-24 was therefore not uniform throughout the Presidency. In districts like Ahmednagar, Bijapur and Sholapur which had again to face a bad year the position was more or less stationary and attention was devoted mainly to consolidation of work already done and to the improvement of the existing societies rather than to organization of new ones. On the whole, however, the agricultural credit movement made fairly satisfactory progress during the year in the Presidency. There was an increase of 210 in the number of societies while the number of members increased by 21,000.

The most noticeable progress was, however, as regards working capital, which rose from 5¼ to 6¼ crores during the year. Steps have been taken to lay down a policy for more effective supervision from within. Better supervision rendered if possible and safer to finance members more adequately than before and for this purpose funds were not lacking. In spite of a very stringent money market the Provincial Bank and the District Banks had more than sufficient funds to meet current demands and had, in fact, to invest large sums outside. At a time when the Imperial Bank rate was as high as 9 per cent, the Provincial Bank instead of raising its rate on deposits had actually to lower it by ½ per cent without causing any depletion in the resources at its command.

The Annual Report on the working of Co-operative Societies shows that amongst the districts Dharwar is the most advanced not only as regards the number of co-operative societies but also as regards the variety of co-operative activities carried on there. It has now 545 societies and nearly 30 per cent of its population is directly or indirectly connected with the co-operative movement. Of the districts which have made the most progress are South Satara and Broach where the population connected with the movement is 24 per cent and 20 per cent respectively. The canal areas of Poona and Ahmednagar districts took up as usual a large amount of capital averaging about Rs. 200 per member. The rest of the East Deccan, however, owing to the recurrence of bad seasons made little progress during the year. The movement is expanding rapidly in Khandesh where the opening of a branch of the Provincial Bank has facilitated the organization and finance of societies. In the non-credit movement very good progress has been made in co-operative marketing of cotton in the Karnatak and in Gujerat and grain and vegetables in Sind.

A noticeable feature has been the organization of 5 fencing societies in the Southern Division which have enclosed 5,400 acres of land and protected them from the ravages of wild animals. A large part of this area was uncultivable before owing to the enormous damage done by these wild animals.

Even in the remaining area the cultivator could secure for himself only a part of the produce.

In Sind the movement continued to make satisfactory progress. In fact, if the figures for 1918 are compared with those of the last year the progress would appear to be remarkable. In 1918 there were only 65 societies, with 3,000 members and 1½ lakhs working capital. Last year the number of societies went up to 558, members to 23,000 and the working capital to 51 lakhs. In respect of the working capital the increase during the course of the year alone was as much as 34 per cent. This large progress has been due to co-operation between all classes, official and non-official, and to the splendid work done by the Honorary Organizers and the District Banks under the influence and guidance of the Assistant Registrar, Khan Bahadur Azimkhan.

The Provincial Bank has now a capital of over a crore of which 20 lakhs is non-withdrawable. It has opened eight branches and, through the shops which are attached to some of them, it arranges to supply agricultural requisites like manure and implements and also to sell agricultural produce, chiefly molasses. It occupies now a very strong position and at one time during the year it was not only in a position to finance District Banks and Societies but had surplus of nearly 55 lakhs which could not be invested within the co-operative movement. With adequate financing of members and with the development of co-operative marketing it is hoped that such surpluses will be rapidly utilized within the movement itself in future. In spite of the fact that surpluses had to be invested at a comparatively low rate of interest the Bank was able to make a good profit and to declare a dividend of 8 per cent for the latter half of the year.

Co-operative Banking in urban areas had developed rapidly during the last three years. Out of the 411 societies that now exist the 39 Urban Banks are the most important. Out of these 21 are Peoples' Banks of the Luzzatti type of which membership is open to all living in a certain urban area and which not only receive deposits and arrange for finance of their members but also do other kinds of banking business. Of the remainder 11 are communal banks members of which belong to a particular class of society and 7 are societies confined to persons of a particular kind of employment. The total membership of all Urban Credit Societies now existing comes to 1 lakh and the working capital to 1½ crores.

The Consumers' Movement did not show any appreciable progress during the year although a few societies did very good work. There are now two hostels in Bombay, one the Madrase Hostel and the other the Nayar Hostel which provide both boarding and lodging for persons coming to Bombay from outside for work. These two together had a turnover of over Rs. 21,000. The Students' Society at the Sydenham College has been doing very useful work and its example is now being followed by the St. Xavier's College. Amongst the other Consumers' Societies only a few have been successful so far. The Bulsar Railway Co-operative Association and the Hadapsar Stores are progressing on sound lines. If sufficient number of workers and also good management are available there is considerable scope for advancement of the Consumers' Movement especially in Bombay City.

Although none of the new housing societies except one showed much progress during the year, the older societies continued to expand. There are now several excellent co-operative colonies and that of the Kanara Gaud Saraswat Society at Andheri may be taken as a model by other similar societies. The Catholic Society and the Saraswat Suburban Society at Santa Cruz have a large number of tenements to which they have been adding every year. Good progress was this year shown by the Gaud Saraswat which has now a set of fine buildings constructed at Matunga. Outside Bombay, two societies at Dharwar have put up a number of model buildings in a healthy and pleasant area on the outskirts of the City. The Indian Christian Society at Ahmednagar has carried out its scheme of building 2-room and 4-room tenements for men of poor means.

There has been no appreciable progress

in Producers' Societies. The total number is now 24 of which 18 are working. The Weavers' Societies showed some progress, though not as much as was desired and expected. There are only about 3,000 weavers in the movement, a small proportion of the total number in the Presidency. A good many of these societies do only credit business. It is only when a society provides yarn to its members and sells the finished product that it can do real good to its members. Some of the societies which did this were able to show good work and the total sales amounted to Rs. 3 lakhs. To arrange for the wholesale purchase and sale of finished articles a Union has been started at Hubli and a Store at Sholapur. The former had a turnover of Rs. 61,000 but the latter started work only after the close of the year. What a good society can do for weavers can be seen from the working of the society at Karkamb in Sholapur. With an initial capital of Rs. 1,500 it has now a reserve of Rs. 1,400. It purchased yarn worth about Rs. 33,000 last year and had a similar turnover as regards sales. The advantages, however, have not been purely material. The reputation of its members for training and character is now higher than it was before and there is a growing tendency to settle all their disputes amongst themselves.

The Co-operative Institute continues to develop its activities greatly. It arranged for several conferences, published lectures and also organized training classes both for Secretaries and for Managing Committee Members. The work done as regards propaganda and training has been productive of much good. It has a quarterly of its own which can compare favourably with any magazine of its kind anywhere in the world. Each of its branches also has its own vernacular magazine. The Institute organized the Provincial Co-operative Conference which was held in Poona in September 1923. Its Standing and Legal Committees are now taking an important part in the development of the co-operative movement and have given valuable advice both to the Department and to the co-operative workers in the Presidency.

Defects and drawbacks there certainly are in the movement. Even in countries where the population is more educated and more advanced these are not non-existent. But its advantages are great and are now fully appreciated. So far as the public is concerned the movement is looked upon with sympathy and there is no opposition from any party, political or otherwise.

Wireless Wonders.

A year ago the inventor, Mr. J. L. Baird, devised a piece of apparatus by which he could send pictures by wireless. Now he has carried his work a step farther and is able to send a picture of any moving thing by wireless.

To prove the truth of his claim he placed his head in the focus of his apparatus and in another room a press representative, with a receiving set, saw not only the head appear but each eye solemnly wink and the mouth open and close. In the same way the movement of the fingers of a hand was demonstrated. At present the apparatus is necessarily somewhat crude, as Mr. Baird has to do all his construction work himself. He converts his moving picture into what is virtually a long series of "dots", by means of rotating lenses and a rapidly rotating interrupter disc behind them. These dots are then amplified and sent out by the ordinary wireless means.

At the receiving end of the "dots" are used to light an electric lamp in a series of flashes before which is another series of rotating lenses which throw their images of the lamp on to a groundglass screen. The apparatus is simply in construction and capable of being worked off any wireless aerial.

It should not be very long, Mr. Baird thinks, before the listener-in may be able, not only to hear the artist at a broadcast station but also to see him. At the same time the transmitting end of the apparatus can be made capable of dealing with any scene in the same way as a cinema camera does now. It is only necessary to focus the object which it is desired to see.

India's Gold Purchases.

A good many vague and ill-informed statements have been made recently about the extent of India's purchases of gold since the war. The following statement of the facts, compiled from authoritative information placed at the disposal of *The Financial Times*, cannot fail to prove of service and counter some of the current inaccuracies.

During the three years 1911, 1912 and 1913 India's net imports of gold amounted to 17,000,000 ozs. Imports for 1922, 1923 and 1924 aggregated to an almost identical total. It is, of course, a fact that rupee values have increased. The aggregate value of gold imports in 1911, 1912 and 1913 was 104 crores of rupees, while the aggregate of purchases in 1922, 1923 and 1924 was 114 crores of rupees.

On the other hand, imports of silver, compared with pre-war figures, show a phenomenal rise. The total imports, in 1911, 1912 and 1913 amounted to less than 66,000,000 ozs., whereas the imports in 1922, 1923 and 1924 totalled more than 265,000,000 ozs. The aggregate value in 1911, 1912 and 1913 was less than 11 crores of rupees, as against a value of nearly 55 crores of rupees for 1922, 1923 and 1924. (To convert into sterling take two-thirds of a crore as equal to one million sterling.)

1911	1912	1913	1922	1923	1924
Net imports of gold on private account (in lakhs of rupees.)					
31,34	44,28	28,61	30,11	39,21	45,10
Do. weight in 000's ounces.					
51,27	73,15	46,25	41,19	58,42	70,00
1911	1912	1913	1922	1923	1924
Net imports of silver on private account (in lakhs of rupees.)					
6,81	5,69	5,44	16,31	19,82	18,85
Do. weight in 000's ounces.					
4,557	30,797	30,542	72,015	99,234	94,000

The chief point to be borne in mind is that India's trade balance since the war has swung over very heavily in her own favour, so that even if one takes as the amount available for gold purchases the margin of exports over imports that margin is very much higher than it used to be. The following statement shows in millions sterling exports, imports and the balance of trade. The balance of trade figure takes into account imports and exports of (*a*) merchandise, (*b*) bullion, and (*c*) paper securities such as Council bills, reserve, Consols and sterling purchased in India for remittance to the India Office.—

INDIAN TRADE—EXPORTS, IMPORTS AND BALANCE OF TRADE IN £. MILLIONS.

	*5 years' average.	1921	1922	1923	†1924
Exports ..	149	162	196	228	208
Imports ..	97	185	157	145	136
Balance of trade	‡	−30	+9	+32	+32

*Pre-war. †10 months. ‡Small adverse balance on average.

It will be seen that the margin of exports of merchandise over imports of merchandise before the war amounted on average to £52,000,000 a year. During 1923 this favourable balance reached the high figure of £83,000,000, and for the ten months of 1924 £72,000,000.

Taking movements of bullion and home remittances into account, the balance of trade was very slightly adverse to India during the five pre-war years on average. During 1921 there was an adverse balance of £30,000,000, which was converted into a favourable balance of £9,000,000 in 1922 and to £32,000,000 in 1923, the total for the first ten months of 1924 also being £32,000,000.

Taking into account the margin between exports and imports of merchandise, India is really spending proportionately less of that margin on gold and silver than she did pre-war, says the *Statesman*. Moreover, the above statement shows that there is nothing in the common rumour that Indian purchases of gold are so very much in excess of pre-war purchases. It should not be forgotten that India has always been accustomed to import the precious metal very largely and that supplies on private account were seriously restricted during the war. Indeed, during 1921 India actually exported on balances 20 crores' worth of gold more than she imported.

Canadian Trade and Finance.

Montreal, March 1st 1925.—While reports on wholesale and retail trade conditions in Canada during the months of January and February do not indicate a general improvement over the preceding year, there has been a larger volume of sales in certain districts and in certain lines. Thus, Ontario dealers in knitted goods and underwear report satisfactory business, sales of automobiles in Manitoba and Saskatchewan mainly for spring delivery show a marked increase over last year, and wholesale business in hardware in Alberta has improved. Retail business throughout the Dominion is still somewhat slow. There is undoubtedly, however, a greater feeling of optimism than at this time last year, in regard to the prospects for spring trade. Further distributions by the Wheat Pool are expected to result in some improvement in sales and collections in the West. If the average price secured by the Pool is a high one, there is no doubt that business will be favourably affected.

Since the beginning of the year, wheat prices have undergone exceptionally wide fluctuations. There has undoubtedly been considerable speculation in this commodity, both in Canada and the United States, by people of moderate means, who came into the market at a time when prices were very high. Some buyers have no doubt experienced substantial losses during the recent decline. There has been a feeling in Great Britain, and perhaps elsewhere in Europe, that speculation played a very important part in the rise in wheat prices from June of last year to date. With this feeling we do not agree, since we think that the rise in price has been almost entirely due to reduced crops and to the operation of the law of supply and demand. The type of speculation to which we referred above has been a later development, and has probably not increased the average price paid for wheat by oversea buyers, since the recent rapid rise in prices to which it contributed was shortly followed by an equally rapid decline. The price at which the balance of the North American crop will be sold will depend, not on speculation, but on the world demand for and supply of wheat.

German Competition.

While Canada's share of payments to be made by Germany is not large enough to give us a vital direct interest in the Reparations Question, we are indirectly very much interested in the Dawes Plan, not only because of the effect which its success or failure may have on our important European customers, but also because of the German competition, which it is feared the effort to pay reparations may cause. It will be remembered that the Dawes Plan provided for payments by Germany at the rate of $260 millions per annum to commence with; and this amount was to be gradually increased to a maximum of $600,000,000 by the year 1928-29. These are sums which can be collected without imposing too heavy a burden of taxation on the German people. Payments are to be made in marks, and credited to the bank account of the Allies' Representative in Germany, the Agent-General for Reparations. There Germany's responsibility ceases. The transfer of these marks to the allied countries is a problem for the Agent-General to solve.

If the Dawes Plan is to be really successful, Germany must create an export surplus large enough to make it possible for the Agent-General to transfer to the allied countries the mark balances he accumulates. In other words, the foreign credits made available annually by German sales abroad must exceed the exchange requirements of importers and others by an amount sufficient to permit the Agent-General to purchase a very substantial amount of foreign exchange each year. It has been stated that this surplus of foreign credits could only be secured by Germany selling great quantities of her goods abroad, and there has therefore been a very general fear that manufacturers of other countries would have to contend with intense German competition, and perhaps see their markets invaded by German goods, the product of cheap labour. This

is a bogey which we believe need not be feared. As time goes on, Germany should be able to regain the foreign trade which she lost during the war, but this will be a very different thing from a forced campaign for exports, and will be much less unsettling to business than the German price cutting which was in evidence during the fall of the mark. The reason for the belief stated above lies in the fact that the surplus of foreign credits which Germany requires will be provided at first by sales of German securities or German properties to foreigners, and not by the sale of greatly augmented quantities of German goods. At a later date, the surplus may be provided by a combination of sales of securities and an export suplus of merchandise. The total amount required for reparation payments could only be provided by an export surplus of merchandise at some comparatively distant date, by which time the world's industry will have had ample time to adjust itself to the situation.

Let us see why the situation should be expected to work out along these lines. It is obvious that the war and the post-war crisis involved a great loss of German wealth. Plant and equipment have not suffered and in fact, in many cases, are reported to have been maintained at a very high standard, but liquid assets have largely disappeared. The country's situation to-day is like that of an industrial concern, which is well supplied with fixed assets, but short of working capital. Both these have to be augmented before German industry can function properly. Scarcity of working capital always produces high interest rates and the attraction of these, joined to the good security which can be offered, will draw investment funds into Germany from all the wealthier countries of the world.

The movement of money towards Germany is already under way. While detailed statistics are not available, we believe that, since the signing of the Dawes plan, German companies have floated abroad, loans to an extent approximating the first year's payments due by Germany under the new agreement. Rates on loans in Germany at the present time are very high, from 10% to 20%, and under such circumstances funds placed abroad by Germans in an effort to escape the effects of currency inflation will obviously find their way back to that country. Altogether, it would seem that financial operations might well provide all foreign credits required to permit a transfer of the payments contemplated under the Dawes plan for a number of years to come, or until such time as the position of Germany as a whole makes borrowing abroad unnecessary. Economists will possibly quarrel with this solution as not being a final one, but if by such means the obligations of the German Government to the governments of the Allied nations can be liquidated and replaced by obligations to individuals, difficulties due to political considerations will disappear and ultimate repayment may be safely left to be worked out between debtor and creditor. After all, in the history of international relations, we find many instances of countries steadily increasing their foreign indebtedness over a period of years, during a time of development or rehabilitation. For examples, we do not have to look any further than the United States during the past century, or our own country from the beginning of settlement to the present time.

In order that the German financing we have referred to may not be interrupted, it is essential that international bankers should not let a desire to obtain present high rates lead them into financing anything which is economically unsound, because Germany must maintain a high credit standing in the international market, if her rehabilitation is to be accomplished in a manner calculated to serve the best interests of the world.

The final solution of this problem, *i.e.*, the development of an export surplus of merchandise and services, sufficient to pay interest on the foreign capital invested, can undoubtedly be attained without great difficulty, after a long period of years, by a well organized nation of 70,000,000 people, provided political conditions do not interfere with the stability and gradual growth of world trade.

English Bank Speeches.

A clear analysis of current problems is usually a feature of speeches made by the Chairmen of the leading English Banks at

the annual meetings of shareholders, and the remarks made on January 21st by Mr. F. C. Goodenough of Barclay's Bank, Limited, and on January 27th by the Right Honourable R. McKenna of the Midland Bank, Limited, were no exceptions to this rule.

We quote extracts from the speech of Mr. Goodenough :

"There has also been some improvement in the industrial outlook, partly because of the better financial conditions to which I have already referred. A check has been placed upon inflation in many European countries, and although this has led to curtailment of the artificial internal prosperity, which in certain cases had already reached its limit and was rapidly approaching collapse, yet, on the other hand, sound credit is now being gradually re-established, together with greater purchasing power abroad, both of which will form the foundation of better trade.

The Government have pledged themselves towards economy in every department and in every measure which affects the national life of the country, so that we may anticipate that steps will be taken to ensure that full value will be obtained for all Government expenditure. The continued exercise of economy by the Government should lead to relief from taxation, and should have a far-reaching effect."

The Right Honourable R. McKenna gave exceptionally full consideration to currency problems and the question of a return to the Gold Standard. He said in part—"The gold standard has, in existing circumstances, great and striking advantages. In the first place, it establishes an international measure of value, common to the whole world and universally accepted.....In the present state of knowledge and feeling, one of the greatest advantages of the gold standard is its moral effect. A nation will think better of itself, and will almost regard itself as more honest if its currency is convertible into gold .....So long as nine people out of ten in every country think the gold standard the best, it is the best. If in the future there were an immense increase or decrease in the output of gold, and, consequently, a startling rise or fall in prices, reconsideration of the subject might be forced upon public attention, but at present there is no single nation, so far as I know, which is now off the gold standard, that does not regard the return to it as the most desirable of all financial measures."

From the remarks quoted above, it is obvious that the return of Great Britain to a gold standard should only be a matter of a comparatively short time. South Africa expects to resume gold payments this year, which is certainly the proper action for that country, since its currency has recently been above gold parity with the result that, for a time at least, one of South Africa's main export commodities—gold—was sold to the mint, instead of being shipped abroad.

Australia, a country which has been suffering from a currency shortage for some time, has within the last two months seen the rise in sterling bring the value of the Australian pound above par in New York, with the result that gold has been shipped to Australia from the United States. So far as Canada is concerned, we have in this letter repeatedly expressed our conviction that the Dominion is fully capable of resuming and maintaining gold payments without difficulty. As the Speech from the Throne at the recent opening of parliament stated that "the financial and trade situation justifies the expectation of an early return to the gold basis", we may hope that definite action will be taken before long. Thus we can see that by far the greater part of the British Empire may quite possibly return to the pre-war status of currency stability during the year 1925.

The United Provinces Government recently represented to the High Commissioner that the rates demanded for space by the British Empire Exhibition authorities were unduly high. In reply a cable has been received from the High Commissioner that the Exhibition authorities point out that no sale license is required if merchants exhibit only with a view to establishing a wholesale trade connection. Concessions are made on space rentals in the case of educational, technical, purely artistic or any non-productive exhibit, as well as to Associations and Corporations showing a collective exhibit.

Economics in the West.

London, 1st February, 1925.—There is no better prospect of industrial peace in 1925 than in 1924, says the Labour correspondent of *The Times*. On the contrary, the danger of disturbances appears greater. At the beginning of 1924 the principal areas of unrest were in the railway transport, the dock transport, the coalmining and the building industries. There continues to be serious discontent in the coalmining industry, where a more favourable wage agreement has failed, because of declining trade, to improve the economic position of the workers, while in the railway industry a formidable programme of claims, presented by the National Union of Railwaymen, awaits consideration. The men in the building industry are contemplating a further effort to improve their conditions, though it remains to be seen if all the unions will act together or whether one or two will detach themselves from the federation. The workers in the engineering industry are resolved to bring to a head the prolonged discussions upon their application for higher wages, and the various organizations of the men employed in shipbuilding are either making specific demands or calling for re-consideration of existing rates of pay. The postal workers also are claiming an improvement of status. Altogether, in one industry or another, the coming months will be closely occupied with negotiations of the first importance to the welfare of the country as a whole.

In the 11 months of 1924 for which statistics are available the aggregate loss of working time due to disputes was 8,223,000 days. The number of the disputes was 636 and the number of workpeople involved 597,000. The most serious disputes from the point of view of the number of men idle occurred in transport. There was the railway enginemen's strike in January, followed by the dockers' strike in February and by the combined strike of London tramway and omnibus men in the third month of the year. These and minor stoppages in the transport industry affected 244,000 men and 1,537,000 working days were lost. Judged from the standpoint of loss of work, the greatest of the disputes of the year occurred in the building industry, where in the total, 112,000 men were involved and no fewer than 3,127,000 working days were lost. In mining and quarrying it is unfortunately normal to have a succession of local disputes even when no general issue is raised. Last year there were 177 of such disputes—including those in the Kent, Forest of Dean, and Bristol areas, where questions arising out of the new national agreement were fought out—127,000 men were affected and 1,475,000 working days lost. In shipbuilding there were 34 disputes, involving 34,000 men and the loss of 594,000 working days; in engineering 27 disputes, involving 11,000 men and the loss of 96,000 working days, in other metal industries 59 disputes, involving 25,000 men and the loss of 681,000 working days, and in the textile industries 44 disputes, involving 10,000 workpeople and the loss of 190,000 working days.

Paper from Australian Wood.

It is definitely announced in the latest official report of the Hydro-Electric Department of Tasmania that the Amalgamated Zinc Company intends to enter upon the manufacture of paper from Australian wood.

The Chief Engineer of the Hydro-Electric Department states that the Amalgamated Zinc Company, having in sight the termination of its work at Broken Hill, is seeking a new line of industrial activity.

After the most careful investigation the directors have determined that the one enterprise in which they can feel absolutely certain of technical and commercial success is the manufacture of paper from Australian-grown timbers. In association with the Bureau of Science and Industry, exhaustive experiments have been carried out not only in regard to mixing hardwood and softwood, but also on the use of hardwood pulp only, and it has now been demonstrated that an excellent newsprint can be manufactured from 100 per cent hardwood pulp.

The company has made arrangements with the owners of very large areas of suitable timber at Hampshire Hills, south of Burnie, and elsewhere, and also for suitable

factory sites, and has during the past few weeks concluded negotiations with Government on the preliminaries necessary for the drafting of an enabling Bill.

One of the directors of the company has sailed to England, where the whole project will be tested on a commercial scale in association with one of the British paper manufacturers. It seems probable that the results secured in Australia will be repeated in London, and that within a few months financial arrangements will be made which will end in the establishment of this extremely important industry in the North-West of the State.

The completed industry will, in all likelihood, involve a capital expenditure of nearly £3,000,000 and the employment of approximately 1,000 hands.

Coal Recovered from River.

A method of recovering coal dust from the River Usk is now being successfully employed at Newport Electricity Works, and is yielding some hundreds of tons of excellent fuel per week.

There is little doubt that the coal comes in the first place from the collieries at Ebbw Vale, 17 miles N.N.W. of Newport, where there are large coal washeries. Here it finds its way into the Ebbw River, and is then carried down in suspension to the estuary of the Usk. The coal dust travels 21 miles by water before it is deposited. In that distance the Ebbw River falls 900ft., so that there is sufficient turbulence to keep the dust in suspension and to overcome any tendency to premature deposit that may be caused by frictional resistance of the river bed and banks. When the coal dust reaches the estuary of the Usk it is swirled back up the latter river towards Newport by tidal action, gravitating out when the flow of the water is arrested at the turn of the tide.

The process of recovery involves digging the deposited dust from the banks of the Usk which flows close behind the power station. The coal is loaded into skips and hauled up the bank by a power-driven capstan, and is then transferred by conveyors to railway wagons in an adjacent siding. Afterwards it is mixed with the ordinary coal supplies and fed to the mechanical stokers in the power-house. In this way as much as 500 tons has been obtained in one week. The cost of recovery works out at about 8s. per ton. The calorific value varies, but is estimated to average 10,000 to 11,000 B.Th.U. per lb. Arrangements are in hand for making more accurate analyses and estimations, as the method has every appearance of becoming an established practice.

Aluminous Cement.

Production of the new aluminous cement, or *ciment fondu*, is to be started by a British company, the Lafarge Aluminous Cement Company, by whom manufacturing premises are being built and equipped on the Thames, near Purfleet. It is anticipated that the plant will be ready for operation in July next.

The site covers an area of about seven acres, with excellent facilities for road, railway and water transport, and practically unlimited supplies of chalk. The only raw material that will have to be imported is bauxite, which will be discharged at the jetties forming part of the works, where provision will be made for the storage of 8,000 tons. With the exception of the special furnaces required for the fusion of the chalk, bauxite, etc., all details of the somewhat complicated and extensive plant have been ordered in this country from British firms. Steel structures and buildings are being supplied by Messrs. Heenan and Froude and Messrs. Nissens, crushing and screening plant by Messrs. Ernest Newell and Co., briquetting plant by Messrs. Johnson and Sons, lime kilns by Priest's Furnaces, Limited, and grinding plant by Messrs. Vickers. The works will be electrically driven throughout and arrangements have been made for the supply of current from the Barking station of the County of London Electric Supply Company.

The output capacity of the plant for which contracts have been made is about 40,000 tons a year, but provision is being made throughout for the installation of additional plant, so that the output may be increased without delay in accordance with increases of demand. As customary in modern cement works practice, the factory will include a laboratory for checking the progress of manufacture and testing the quality of the finished

cement, as well as for the conduct of tests and experiments to suit the requirements and ideas of purchasers.

It is intended to build a model village of about 100 houses, for occupation by the workpeople, on land which has been acquired in the immediate vicinity of the works. These houses will be built by arrangement with the Orsett Rural District Council, under the provisions of the Housing Act.

German Sugar Industry.

The movement towards concentration in the German sugar industry is making greater progress, and the negotiations which are at present being conducted in Berlin with a view to merging the two organizations in the industry, the Association of Raw Sugar Producers and the Association of German Sugar Industry, are significant. The former organization will be dissolved, and its executive will join the Board of Management of the Association of the Sugar Industry, which will then be representative of the entire German sugar industry. The association has not the character of a syndicate, and is not fixing prices.

The sugar industry in the Rhineland suffered heavily under adverse conditions during the period of inflation and also during the occupation. The factories in the district are without an adequate supply of raw material, and, having to pay the high prices charged in the open market, they are unable to compete. The removal of the restrictions on the export of raw sugar is also tending to raise the price of raw sugar in the home market and to make the position of the refineries outside the large concerns very precarious. The amount of raw sugar which the Government has given permission to export this season already totals 220,000 tons.

Swiss Electrical Enterprise in U.S.A.

The Brown-Boveri Electrical Manufacturing Company of Switzerland has announced through its American representative that it has decided to invade the American field. The company will make an initial investment of from $35,000,000 to $40,000,000 by purchasing several large manufacturing plants now in successful operation, and expects to be in active competition with American manufacturers in 90 days. This decision has been taken after a two-year survey of the field on the urgent invitation of a number of American railway and public utility companies. The plants to be acquired are on the Eastern seaboard from Boston to Chesapeake Bay, in the Mid-West, and on the Pacific coast. The company expects to play an important part in the electrification of railways and in the rapid development of super-power systems.

Iron and Steel Output.

The statistics of the French production of iron and steel for the year 1924 show a marked increase on those for the previous year. The figures are :—

	1923.	1924.
	Tons.	Tons.
Pig iron ..	5,299,586	7,651,972
Steel ..	4,976,869	6,906,502

If the part of Lorraine which was restored to France by the Treaty of Versailles is left out, the comparative figures are as follows:—

	1913.	1923.	1924.
	Tons.	Tons.	Tons.
Pig iron ..	5,207,000	3,432,422	4,671,628
Steel ..	4,687,000	3,400,810	4,541,689

These figures demonstrate how the iron and steel foundries of Briey and other districts of pre-war France have had to suffer from the competition of those in ex-German Lorraine.

Cotton Exports from America.

A good many buyers of cloth in foreign countries have, on their own admission, been deferring orders in the hope of cotton declining under the influence of an American crop which is certain to exceed consumption to a considerable extent. But the surplus is not likely to be so considerable as seemed possible three months ago. This accounts for the continued strength of the raw material in the United States. So much cotton has been taken from America by European and other countries this season that there will have to be a sharp contraction in exports to leave a comfortable surplus in that country. The big shipments are a very definite proof of the smallness of supplies of cotton textiles all over the world, and make it essential that the 1925 crops should be at least as generous as those of 1924. The maintenance of prices at a profitable level should ensure a good

acreage in America. This is a vital factor. It is, however, as important for America as for the rest of the world that she should raise a substantial exportable surplus.

Steel Houses.

The lead given by the Government in the matter of the erection of steel houses is stimulating public authorities in many parts of the country, and not least in the West Riding of Yorkshire, where attention is being paid not only to steel but also to other substitutes for ordinary building materials. A scheme for building cast-iron houses similar to those at Rotherham is now announced for Mortomley. Messrs. Newton, Chambers, & Co., are associated with it, and are to make the whole of the material for two houses to be erected at Mortomley, on plans which have been approved by the Wortley Rural Council. Each house will have six rooms of ordinary size, with bathroom, and there will be an inside lining of fireproof material. It is expected that they will be ready for occupation in from four to six weeks from the time of starting.

The Hull Corporation Housing Committee have not only accepted from the Ministry of Health the offer of two Weir steel houses, but also have before them the plans of another type of house, built of reinforced concrete, by Mr. Robert G. Tarran, of Hull. These are estimated to cost from £450 to £475 each, and can be completed in 28 days. The concrete slabs, the standard slab being 6ft. by 2ft. 9in. by 3in. thick, are cast on the site in moulds by unskilled labour, under skilled or semi-skilled supervision. The proposed framework is of wood, but, in view of the Ministry's objection to wood in a concrete house, the inventor is prepared to substitute steel, and it is reported that, with this alteration, the Hull authorities would be ready to accept the houses. Two houses on the Weir system are to be built on the Leeds Corporation's estate at Meanwood. They will have two bedrooms instead of three, as the company operating the system can at present build the two-bedroom type more quickly than the other.

The Denaby and Cadeby Colliery Company have decided to adopt a central heating plant for the supply of hot water to the new miners' houses which they are having built at Conisborough. There are to be 800 houses on the estate, of which 400 are being built at present, and the central heating plant is designed to supply the full complement. Two boilers, 30ft. by 7ft., are to be installed, with water tower, circulating pumps, and about 12 miles of piping. The main circulating pipes are to be carried overhead on piles across the yards and gardens, and the supply pipes will be run through the houses under the ceilings of the ground floor. The approximate cost is £14,000.

Oxford University.

The Convocation of the University of Oxford held on October 28th last added a new clause exempting from Responsions :—"Any person who has obtained the Degree of Bachelor of Arts or Bachelor of Science at an Indian University approved by the Hebdomadal Council, provided that his course at his Indian University included the study of English and of one of the languages, Latin, Greek, French, German, Sanskrit, Arabic, Persian, Pali, Classical Chinese." This clause is now in force. A guarantee of an Indian University, under the new clause, will be eligible for exemption from Responsions, provided his course of study has included English and one Classical Oriental language. A student so exempted will, of course, be required to take the full three years' course leading to a Pass or Honours Degree at Oxford, unless his qualifications render him eligible for recognition as a Junior or Senior student, in which case, in addition to his exemption from Responsions, he would be entitled to exemption from the first year course. The exemption now granted will prove of real value to Indian students generally, and will tend to remedy any hardship caused by the recent Statutes governing the grant of Senior or Junior Status. But it must be noted that many Colleges as well as the non-collegiate body at Oxford are more reluctant to admit students who do not possess a knowledge of Latin or French. It will be difficult for Indian students to obtain an offer of admission unless they can show this knowledge of Latin or French, preferably by passing the Oxford or Cambridge Local School Certificate Examination.

Indian Economic Notes.

An important announcement was made by Sir Alexander Muddiman in the Council of State to-day regarding the representation of Moslems and other communities in all-India services. This was in reply to a resolution moved by Mr. Syed Raza Ali, asking for the modification of the existing system of recruitment for public services by fixing for the Moslem community an adequate share in the services, whether by competition or by selection and by maintenance of two lists, one for Moslems, and the other for Non-Moslems and by prescribing minimum standard of qualification. He said if that resolution was passed it would remove apprehensions of Mahomedans as to their future in self-governing India and remove much of the unpleasantness. It was the duty of the Hindus to satisfy the Moslems as it was the duty of the Moslems to assure the former that in their relation with their co-religionists in foreign countries they would place the interests of India first and communal considerations next. Sir Alexander Muddiman said that the Government must rely primarily on their measure for recruitment. Promotion must go by merit and selections for posts, requiring special qualifications, must be determined by strict regard for necessary qualifications and general public interest. Regarding the existing members the Home Member made it clear that Indianisation would not be by door of supersession.

Concluding, Sir Alexander said, 'I admit there is need for adequate representation of minority communities, but we cannot impair efficiency of service by admitting persons not qualified. We do contemplate extension of present arrangement to secure representation of minority interests, provided there is adequate qualification. At present we reserve one-third of vacancies in the I.C.S., which will be filled by direct recruitment in India to the redress of inequalities. We propose in future to reserve one-third of the whole of Indian recruitments. We shall, as in past, normally appoint officers by observing results of the competitive examination. If results are satisfactory, we shall be in difficulty ; if not, we shall resort to process of nomination. We shall nominate as far as possible to these vacancies which we hold by selection from among candidates who sat for competitive examination and attained adequate standard. If there are no such candidates we may have to adopt other means of obtaining them. If we cannot obtain candidates with adequate qualifications, we shall not appoint them. Regarding other three all-India services (Police, Engineering and Forests), we shall similarly reserve one-third of the total vacancies.

Mr. Raza Ali expressed gratitude for the pronouncement which was of momentous character. There might be criticism of this new policy, but if the Government proposed to treat minority communities justly it would be their duty to see that no political capital was made out of the announcement.

The resolution was withdrawn.

British Empire Exhibition, 1925.

The Government of India are now in a position to make the statement in connection with India's participation in the British Empire Exhibition in 1925. The Government of India are not taking part officially. The building with its fittings and forestry exhibit is being sold to the Exhibition Board, and the Government of India are relieved of all responsibility in connection with it. The Exhibition Board have made the following arrangements for accommodating Indian exhibitors who wish to take part in the 1925 Exhibition. The rent charged to them for floor space in the Indian Pavilion is to be £1 per square foot, with discounts of five per cent on rentals between £250 and £500, ten per cent discount for amounts between £500 and £1,000 and twenty per cent discount for over £1,000. Special terms will be quoted for Government exhibits, Indian States and rents over 5,000 square feet. Fifty per cent of the rental for space applied for should be sent with applications or be paid into any Branch of Lloyds Bank

in India whose receipts should accompany applications. Balances are to be paid on occupation. No commission will be charged on sales, but a selling license based on stall frontage of £5 per linear foot will be granted subject to a minimum of £50. Numerous fittings for small stalls are available for hire by private treaty. Water, gas and electric light will be charged according to consumption. Applications are to be made to the Controller of the Indian Section of the Exhibition. These terms are very similar to those in force last year in the Indian Pavilion.

Prices of Foodgrains in India.

The average level of wholesale prices of cereals and pulses in India on or about the 31st January, 1925, showed a remarkable rise of 5 per cent as compared with a fortnight ago. Prices of jowar and gram increased by 5 per cent, bajra by 6 per cent, maize by 7 per cent, barley by 8 per cent and wheat by 9 per cent, while those of arhar dal fell by 1 per cent only. Prices of rice remained stationary. There was no change in the prices of ghee, raw sugar (*gur*) and salt. As regards provincial prices the most noteworthy fluctuations were as follows :— (1) In the United Provinces, an increase of 12 per cent in jowar and bajra each and 10 per cent in maize ; (2) in Delhi, a rise of 21 per cent in gram, 20 per cent in bajra, 17 per cent in wheat and 10 per cent each in barley and raw sugar (*gur*) ; (3) in the Punjab, an advance of 15 per cent in wheat ; (4) in the North-West Frontier Province, a rise of 16 per cent in jowar, 14 per cent in wheat and 11 per cent in maize ; (5) in Sind and Baluchistan an advance of 13 per cent in bajra and 12 per cent in wheat ; (6) in Madras a decrease of 18 per cent. in arhar dal ; and (7) in Bihar and Orissa a fall of 10 per cent in bajra. Prices of rice in Bengal remained unchanged, while those of wheat in the Punjab increased by 15 per cent.

Economic Freedom.

Economic and not mere political freedom should, in Mr. Oswald Mosley's opinion, be the outlook of Indians. Speaking at a farewell meeting of labourers, who presented him with an address on February 13th, Mr. Mosley took the above subject for his theme and developed it. The speaker, however, recognized the force of the argument advanced by Indian politicians that they had not the power to raise the masses from economic bondage. He would therefore advise them to realize that with the advent of political freedom their work did not end, but really began. He instanced the case of England, whose political freedom had been won by the Liberals, but whose economic freedom that political freedom only led to but did not solve. It was the Labour Party and the Socialist Party of England that were now boldly attempting a solution of the economic difficulties to the argument that Labour and Socialist activities bred a class war. Mr. Mosley replied that it really attempted to abolish the class war created by the industrial and social system of England. Finally the speaker advised the Indian labourers to organize themselves for economic freedom and thus pave the way for real international fellowship.

Income Per Head in India.

Professor P. Ghose of the Calcutta University contributes to the current number of the *Calcutta Review*, which is now conducted by that University, a paper reviewing the estimates made from time to time of the income per head of the Indian people. The first estimate was that of Dadabhai Naoroji in 1867 ; it was Rs. 20. The Financial Statement of the Government of India in 1881, raised it to Rs. 27. William Digby estimated it at Rs. 17.5 in 1898, while Lord Curzon put it at Rs. 30 in 1901. Mr. Atkinson in 1902 worked it out to have been Rs. 35.2 in 1895. For sixteen years after that no one seems to have made any attempt at an estimate. In 1918, however, Mr. Horne in the *Bengal Economic Journal* suggested Rs. 46 as about the average annual income in India. Sir M. Visvesvaraya's estimate of Rs. 60 in his presidential address to the Economic Conference last year, seems to have escaped the notice of Professor Ghose. He mentions that in his book on "Reconstructing India," Sir M. Visvesvaraya gave Rs. 45 as the *per capita* gross produce—not income —in 1919. Mr. Shirras' estimate is the latest and the highest. It is Rs. 116 for 1922. Professor

Ghose subjects Mr. Shirras' data to a critical examination and concludes that the average income of an Indian is Rs. 46.6 and not Rs. 116. But what is the Rupee ? It has itself varied greatly in value all these years. The Rupee in 1870 was not the same as in 1920. It is true that the average Indian handles more rupees than his father did in a year, but to what extent does the increase in the number of coins represent an increase in the necessities and amenities of life ?

Cultured Pearls.

A method of discriminating between natural pearls and "cultured" ones has been discovered. The natural pearl is formed of successive concentric layers of a deposit of carbonate of lime having no core or centre, while the cultured pearl has a kernel of mother-o'-pearl, covered with successive layers of the same deposit. Without cutting them in half and destroying them, no way has hitherto been found of distinguishing them. X-rays were tried without success. The heart of the pearl is photographed with a lens immersed in cedar oil, the intense light needed being supplied in a way similar to that used for the ultra-microscope. The photograph thus obtained shows the circular structure of the natural pearl, while the Japanese product reveals a streaked globe, parallel streaks being the special characteristic of mother-o'-pearl.

New Kind of Sugar.

From the desert regions of Eastern Paraguay comes a plant containing a substance nearly two hundred times as sweet as cane sugar. "The plant, which goes under the name of *ka-a-he-e* belongs to the family of composites, of which the sunflower and daisy are familiar representatives. The sweetness which it contains is not a sugar, but a glucosid somewhat similar to that found in the root of licorice. The leaves are dried and ground up, and a pinch of them is added to anything that requires sweetening ; or they may be soaked in water and a sweet liquor prepared. One of the most valuable qualities of this liquid is that it does not ferment, as a syrup does. The possible uses of such a plant as this are more or less obvious, says a writer in the American paper *Good Health*. It will particularly interest sufferers from diabetes, promising to furnish them with a sweetening that has none of the harmful properties of sugar. "Its non-fermentability may be of value commercially, as in the preparation of sweetened beverages. It would also be of value, from this point of view, because it would not tend to favour the growth of bacteria in the mouth."

Coal in Mysore.

A recent telegram from Oorgaum says :— A fairly authentic information has reached here that as a result of Boring Operations which had been conducted for several months past by the Mysore Government at Kamasamudram about 8 or 9 miles from here across the country and 18 miles by Rail *via* Bowringpet. Coal has been discovered by Mr. Schomberg who is in charge of the Operations. Government now wish a small prospecting shaft to be sunk, and have requested the Oorgaum Gold Mining Company to undertake the work. They are going to oblige the Government and to do the needful discovery. If it plans out well and reports say that it will prove of immense benefit not only to the Kolar Gold Mines as John Taylor & Sons will naturally buy up nearly all the coal produced but the Railway of South India also will share in the benefits, particularly the Mysore State Railway, to say nothing of its value to the Mysore State.

Madras Port Fund.

Mr. A. A. Biggs, Chairman of the Madras Port Trust, in forwarding the administration report of the Port Fund for the year 1923-24 to the Government of Madras, says that four hundred and forty-eight vessels were berthed alongside the quays against 376 during the previous year and 391 in 1921-22, of which 145 were with passengers, 251 with general cargo and 52 with coal. The number of vessels that occupied the west quay berths is 292 against 255 in the previous year and 237 in 1921-22. It is to be observed that there was as usual greater demand for west quay berths on account of the quicker facilities afforded to the commercial public in landing and shipping cargo and passengers alongside the quays. There were 11 accidents during the year, but no serious damage was done to shipping.

World's Agriculture.

The Results of Last Season's Wheat Crops.

Rome, January 1925.—The information available at the International Institute of Agriculture regarding results of last season's wheat crops (1924 in the Northern Hemisphere and 1924-25 in the Southern Hemisphere) allows of formulating some conclusions which can scarcely require any modification even when the few missing data and the usual revisions of some figures come to hand.

The aggregate area under wheat in 1924 is stated below, and comparisons are made with the figures of the previous year and of the five-year periods 1918 to 1922 and 1909 to 1913.

Area Under Wheat.
(in Thousand Acres)

Regions	1924	1923	Average 1918 to 1922	Average 1909 to 1913
Europe ..	65,290	64,548	61,815	71,632
North America ..	76,715	82,332	84,486	57,043
Asia ..	33,501	33,220	30,968	31,049
North Africa ..	8,335	8,510	7,804	7,695
Argentina ..	17,755	17,216	15,979	16,052
Australia ..	10,799	9,509	8,592	7,604
Total ..	212,395	215,335	209,644	191,075

It should be noted that these totals do not include any data for the territories now forming the Union of Russian Republics.

The areas under wheat in 1924 were in all continents greater than those of the pre-war period, except in Europe; and, North America excepted, they were also greater than in the 1918-1922 period. As compared with 1923, there was a decided decrease in the wheat areas of Canada and the United States, partly compensated by increases in Europe, Asia, Argentina and Australia. The aggregate area under wheat in 1924 proves to be 1.4% less than in the previous year, but 1.3 % greater than the average of the five years from 1918 to 1922, and 11.2% more than the average from 1909 to 1913.

Before the war, the world could add to the crops obtained in the countries specified, the exportable surplus from the wheat fields of Russia. Even in 1924, had the pre-war yield per acre been maintained, the extension of the world's wheat area would have been such as largely to compensate for the disappearance of Russian wheat from world markets.

The chief reason for the relative scarcity this year as compared with last year and with the pre-war period, is the reduction in the average yield per acre in most of the producing countries, as is indicated in the following summary, which shows the average yields per acre obtained in the various continents in 1924 in comparison with those of 1923 and with the averages for the quinquennial periods 1918-1922 and 1909-1913.

Average Yield, in Centals per Acre.

Regions	1924	1923	Average 1918 to 1922	Average 1909 to 1913
Europe ..	9.8	11.6	10.2	11.3
North America ..	8.9	9.3	8.2	9.4
Asia ..	7.2	7.5	7.2	7.4
North Africa ..	5.9	7.6	6.5	7.3
Argentina ..	6.5	8.7	7.0	5,5
Australia ..	9.3	7.9	7.0	7.1
General Average	8.7	9.5	8.5	9.3

In consonance with the decline in yield per acre, the total production of 1924 proves to be much below that of 1923. It is only slightly larger than the pre-war average, although the area cultivated was considerably greater. As compared with the average of the period from 1918 to 1922 , the production of 1924 appears to be somewhat better, consequent on a small additional area and a little larger yield per acre.

Wheat Production.
(in Million Centals)

Regions	1924	1923	Average 1918 to 1922	Average 1909 to 1913
Europe ..	640.8	750.9	631.0	809.3
North America ..	686.5	763.0	690.0	532.4
Asia ..	241.6	247.7	223.5	230.2
North Africa ..	49.2	64.2	50.5	56.4
Argentina ..	114.9	148.2	112.9	88.2
Australia ..	97.2	75.0	60.6	54.2
Total ..	1,830.2	2,049.0	1,768.5	1,770.7

When dealing with these totals from the aspect of world supply it is necessary to remember that in pre-war years the Russian wheat crops supplied an average of 90 million centals, thus providing a supplement for the world's requirements, in addition to the quantities available from the countries mentioned. To this extent the total yearly available supply of wheat during the five pre-war years was really larger than that shown under the heading of 1909-13 in the preceding table. Taking this factor into account, it may be said that the available supply of wheat for the current season is less than that of the pre-war period, besides being decidedly below last season's. The sharp rise in price during the second six months of 1924, finds its justification in the relatively unfavourable results of the most recent harvest, largely the outcome of inclement weather generally affecting the yield per acre. The current high prices tend to some economy in this respect.

Secondary School Education.

Sir Robert Blair, Education Officer, London County Council, writes as follows :—

A Return of the number of full-time pupils attending Secondary Schools in England and Wales has just been presented to Parliament. In view of the demand for a large increase in the amount of Secondary School accommodation, this White Paper is of more than ordinary interest. Lest the unwary may be misled, the Board of Education has prefaced the Statistical Tables with a few cautionary notes.

One of these is very important : no pupils, except those attending schools on the Grant List, are counted in this Return. Such a note is a reminder that the Return is one of pupils and not of places. As, however, the standard of provision is frequently stated in similar terms of so many per 1,000 of the population, the two are often confused. In certain areas they may closely approximate ; in others, the difference is very considerable.

The Report of the Board of Education for the year 1922-23 tells us that in addition to the 1,129 Secondary Schools on the Grant List, there are 321 others recognized by the Board as efficient. The accommodation in these two groups must, in each area, be added together before anything approaching an estimate of Secondary School provision can be formed.

So far as to quantity. With the help of Statistics of Public Education for 1920-21 (the last published), some factors in the element of quality may be introduced. And these are rather disconcerting. For example in two neighbouring County Boroughs the numbers attending (Cmd., Paper 2284) are 8.9 per 1,000 of the population and 9.2 respectively. The Statistics of Public Education give 15y. 8m. (Boys) and 15y. 10m. (Girls) as the average leaving age in the former and 15y. 4m. and 15y. 7m. in the latter. Further, the percentage of pupils leaving between 12 and 16 is 59.9 (Boys) and 52.9 (Girls) in the first, whereas the figures are 85.1 (Boys) and 69.0 (Girls) for the second. For Secondary Schools the Regulations of the Board of Education require " that the school life of the pupils must normally extend at least to the age of 16".

I have followed up this example by setting out in tabular form the names of the ten largest towns in England with the numbers attending (as in Cmd. 2284), the average leaving age, the length of the school life after 12, and the percentage leaving between 12 and 16 ; and the suggestion which such tabulation throws up as to the provision of Secondary School places is, particularly in some conspicuous cases, the reverse of the good impression which the incautious might gather from Cmd. 2284.

One further point. To state it will be sufficient. The provision of Secondary School places, considered separately, is only part of the provision for pupils of 12 to 18 years of age : certain areas believe that other forms, such as Central Schools, Junior Technical Schools, and so on, are more suitable to their needs. The problem is one whole and ought to be treated as such. Mr. Trevelyan in his speech on the Estimates (July 1924), said : " The present Government feel that the central need is a great expansion of Secondary education or of equivalent types of advanced education."

Books in Brief.

Short Reviews of Recent Books.

The Wealth of India.

By P. A. Wadia, Professor of Politics and History, Wilson College, Bombay, and G. N. Joshi, Lecturer in Economics, Wilson College, Bombay. Published by Messrs. Macmillan & Co., London and Bombay. Price 21 *sh.* net.

We welcome this work, for it embodies a bold attempt in definite terms. It formulates an economic policy for India based on a critical study of economic principles and policy. It is a work conceived and followed out on right lines. The conclusions the authors arrive at may not be satisfactory to all their readers but there is no denying the fact that they have approached the problems of Indian Economics from a wholly unbiassed view-point. To those interested in current topics of economic interest we would recommend the following chapters:—The Income of British India (Chap. VI); Law of Agricultural Production (Chap. XII); Sub-Division and Fragmentation of Holdings (Chap. XIII); Agricultural Indebtedness (Chaps. XV and XVI); Indian Industries (Chap. XVIII); Factory Labour (Chap. XIX); Industrial Capital (Chap. XX); and Cottage Industries (Chap. XXII). A book of special interest to all publicists in India, it ought to be in every Public and College Library.

Writings and Speeches of Hon. G. V. Joshi.

Edited by his son D. G. Joshi. Published by the Aryabhushan Press, Poona.

The late Mr. G. V. Joshi was known as a walking encyclopaedia of facts and figures. He inspired, at a time when the study of statistics was still unknown in this country, considerable fear in his opponents and much respect among his friends by the unrivalled knowledge he possessed of facts and figures pertaining to India or of foreign countries. In comparative statistics, he excelled to a degree unknown in those days. It is no wonder to hear that the late Mr. Gokhale and Mr. N. C. Kelkar encouraged Mr. Dinkar Ganesh Joshi to undertake the work of issuing his father's writings and speeches, in a fairly handy and compendious form. Mr. Dinkar Joshi has done his work with care and attention and the thanks of the Indian public is due to him for the collection he has given us. The writings and speeches now made available will, we have no doubt, be widely read all over India. The late Mr. Joshi's reputation is enough guarantee for the excellence of the fare it provides to almost every kind of reader who can be said to possess any liking at all for the sort of serious reading and pondering it provides. The volume has been got up in substantial form by the Aryabhushan Press, which deserves a word of praise for its part of the work in this connection.

The Economic History of Ancient India.

By Santosh Kumar Das, M.A., Professor of History and Economics, Tribhuban-Chandra College, Nepal. Published by the Author at 5/2, Ananda Dutta Lane, Howrah, Bengal. Price Rs. 3.

This book, dedicated very appropriately to the memory of the late Sir Asutosh Mukherji, whose zeal for the advancement of Ancient Indian History and Culture, is well known, is a commendable attempt at presenting in brief outline the economic history of Ancient India. Mr. Das has done his work in the true spirit of a scholar imbued with the best instincts of research. While he has avoided footnotes, he has quoted his authority for almost every statement he has made in his work. His book is written in a simple, unostentatious and unemotional style. It is all the same appealing to a degree. Its eminently comprehensive character will be evident when we say that it includes the following chapters:—The Palaeolithic Age; The Neolithic Age; The Copper Age; The Rig Vedic Age; The Brahmana Period; The Age of Gautama Buddha; The Maurya Period; The Andhra-Kushana Period; The Gupta Period; and The Age of Harsha. There is a good subject index at the end of the volume. If we may suggest an improvement or two, we would add:—(*a*) quotations in Sanskrit should be in Devanagari script, and must be followed with translation in English; (*b*) a few misprints appear here and there and these should be set right in the next edition. Altogether a work well conceived and on the whole well carried out.

The Indian Year Book, 1925.

Edited by Sir Stanley Reed, Kt., K.B.E., LL.D. and S. T. Sheppard. Published by Messrs. Bennet Coleman & Co., Ltd., "Times of India" Offices, Bombay. Price Rs. 5.

This historical and statistical account of India has made its 25th annual appearance. It is in every sense an up-to-date production. Almost every topic of note has been touched upon concisely in it. To the publicist and to the general reader, it ought to prove immensely valuable. An excellent map of India forms the frontispiece, while a well-done index aids the busy writer. The "Indian Glossary" and "Who's Who in India" are both comprehensive and ought to prove helpful in every way. The 1921 census figures have been, we note, incorporated in this edition of the *Year Book*. The earlier publication of the book is welcome and the resolve to issue the same hereafter earlier than hitherto will be widely appreciated, for nothing is so exasperating as a *Year Book* of this kind issuing later than January of each year. We cordially welcome the book as the most comprehensive, handy and apt reference book available in India.

Commonwealth of India Bill.

General Secretary's Office, P.O. Box No. 904, Madras S. Price As. 8.

We should compliment the National Convention, India, on the handy Volume they have produced. The Bill deserves the widest publicity and for securing it, a production of this nature is a *sine qua non*.

Punjab Board of Economic Inquiry.

The following is a summary of the Proceedings of a Meeting of the Board of Economic Inquiry, Punjab, Rural Section, held in the Financial Commissioners' Room, Lahore, at 11-0 a.m., on Wednesday 11th February, 1925 :—

Present :

C. M. King, Esq., C.S.I., C.I.E., I.C.S. (*Chairman*), H. R. Stewart, Esq., I.A.S., L. Mulk Raj Bhalla, L. Shiv Dyal, M.A., Prof. Brij Narain, M.A., L. Vishnu Dutta, M.A., LL.B., C. F. Strickland, Esq., I.C.S. (*By Invitation*), and W. H. Myles, Esq., M.A. (*Honorary Secretary*).

1. The minutes of the meeting held on the 13th December 1924 were taken as read and confirmed.

2. The minutes of the Additional Meeting held on the 3rd January 1925 were taken as read and confirmed with the exception of the substitution of the word "unreliable" for "approximate" in para 1, sub-para 3.

3. Before the next item was taken up the Chairman called the attention of the Board to a reference from the Hon'ble Member for Finance in which a request was made that investigators in the villages under inquiry should submit, if possible, before August next, information under the following heads :—

(*i*) How much do agriculturists lend ?

(*ii*) How much do non-agriculturists lend ?

(*iii*) What is the proportion of the total amount that is lent in the village that is lent by non-agriculturists ?

(*iv*) For what purposes do agriculturists lend ?

(*v*) Do agriculturist money-lenders keep accounts, and, if so, of what kind ?

After considerable discussion it was agreed—

(*a*) that the answers to the Section on Indebtedness in the General Questionnaire would not furnish the information desired ;

(*b*) that the information required would have to be got from the borrower, and not from the lender ;

(*c*) that, as the time allowed was short, the additional questionnaire should be as simple as possible consistent with answering the questions mentioned ;

(*d*) that the inquiry should be confined to the current year from the sowing of last *Kharif* to the reaping of the *Rabi* ;

(*e*) that information should be collected both on the borrowings during the year and on the outstandings at a definite date, namely the 1st June in the year ;

(*f*) that a Sub-committee comprising Messrs. Strickland (by co-option), Emerson and Brij Narain should be responsible for the framing of a questionnaire, the former to draft it in the first instance and circulate it to the others.

4. *General Economic Inquiries.*—(*a*) The Honorary Secretary reported that all inquiries have been set agoing except in the Lyallpur and Jullundur Districts. In the former District the Board has sanctioned postponement till S. Jaimal Singh is free in May, (*vide* Proceedings dated 3rd January 1925, para 4) ; for the latter, the investigator Sardar Ajit Singh Dhesi resigned on appointment in the Co-operative Department. The Honorary Secretary pointed out that as the Lyallpur Inquiry will not be started till about May, and as Mr. Roberts is probably going on leave, Mr. Penny be asked on his return, if willing, to act as the Member-in-Charge.

(*b*) (*i*) *Amritsar Inquiry.*—The Chairman intimated that Sardar Gian Singh had begun work in *Ghaggarbhana* village and was favourably entrenching his position among the people there. (*ii*) *Multan Inquiry.*—The Honorary Secretary reported that nothing had been heard from Mr. Emerson, the Member-in-Charge, but Mr. Emerson had stated verbally that Radha Krishen Seth was progressing favourably at *Durana Langana*. (*iii*) *Rohtak Inquiry.*—Prof. Brij Narain reported that Raj Narain had started work in *Gijhi* village and was getting on well. (*iv*) *Rawalpindi Inquiry.*—(*a*) The Honorary Secretary read a letter, dated 6th January 1925, from N. C. Ahuja, Honorary Investigator, in which he suggested three separate consecutive inquiries in different tracts of the districts, each taking three months to complete, and his reply thereto in letter No. R/56-5/15, dated 13th January 1925, in which the Chairman requested that inquiry be completed in one village in the first instance.

(*b*) Mr. Stow's Progress Report was read stating that Mr. Ahuja had started work in *Changa-bangial* in Gujar Khan Tehsil, and was progressing.

(*v*) *Jullundur Inquiry.*—With reference to Sardar Ajit Singh's resignation mentioned above, the Board authorized Mr. Calvert to select another investigator and have the inquiry set agoing at once.

5. *Kangra Inquiry Report.*—The Honorary Secretary reported that he had heard nothing from Mr. Calvert on this subject, but that Mr. Mul Raj, the Investigator, had seen him that morning and reported that he hoped to finish his Report by end of February. The Board felt that printing would be expedited if the Report were received in time to have it circulated to members for discussion at the April meeting of the Board.

6. *Ferozepore Inquiry Report.*—The Honorary Secretary reported that Mr. Calvert had written stating that he had hoped to have the suggestions made at the Additional Meeting incorporated in this Report before the present meeting, but had been delayed through the absence of certain statements.

7. *Muzaffargarh Mortgage Inquiry.*—The Chairman reported that he had written to Mr. Anderson, but had had no reply.

8. *Economic Value of Goats in the Punjab.*—Mr. Stewart's letter No. 668, dated 31st January 1925, was discussed, as well as a letter No. 569, dated 9th February 1925, from Mr. Milne. The Board authorized Mr. Stewart to proceed with the printing of his note in the Indian Journal of Economics.

9. *Size and Distribution of Holdings in the Punjab.*—The Honorary Secretary read a letter from Mr. Calvert in which he said that he was awaiting Prof. Bali's note. The Board sanctioned publication of the Report as it stood.

10. The Honorary Secretary reported the nomination of L. Vishnu Dutta, M.A., LL.B., Assistant Editor of the "Tribune", as a Government nominee to the Board.

11. *Prize Thesis.*—The Honorary Secretary reported that advertisement had already appeared in the "C. & M. Gazette", and the "Tribune", and would be sent in every month.

12. (*a*) The Board sanctioned the payment to investigators of Railway fare at Single Second class rates for Railway journeys sanctioned for the purposes of the Inquiry.

(*b*) The Honorary Secretary read letter No. 725/9B, dated 4th February 1925, from the Secretary, Joint Board, reporting that the Budget for 1925-26 had been cut down from Rs 35,000 to Rs 27,000.

C. M. KING,
Chairman.
13th February 1925.

W. H. MYLES,
Honorary Secretary.
12th February 1925.

The Mysore Economic Journal

A Monthly Periodical devoted to the Discussion
of all Economic Topics of Interest

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Madras since the British Conquest—I.

By the Editor.

It has struck me that much useful work can be done in the field of Indian newspaper records of a century ago. They are, as a source of history, of extreme value. In modern times, the daily newspaper is a valuable record of current history. Lord Morley's famous remark about the invaluable Foreign Affairs page of the *Times* is too well-known to be referred to here. Even a hundred years ago, when the newspaper in India was still in its infancy, so to speak, it chronicled daily events in no uncertain manner. To illustrate the light they throw on contemporary history, I shall confine myself to a definite period in the history of the Madras newspapers and illustrate how far they are an aid to the interpretation of the history of the period.

The period I have in view is a part of the period covered roughly by the decade 1830 to 1840. During this decade, Madras enjoyed the privilege of being presided over by three Governors. The first of these was Stephen Rumbold Lushington, who assumed charge of office on October 18, 1827, and made it over and embarked for England on 25th October 1832. He was succeeded by Lieutenant General Sir Frederick Adam, K.C.B., who laid down office on 4th March, 1837. Then came Lord Elphinstone, G.C.B., who assumed charge on March 6, 1837 and laid down office on 24th September, 1842. The history of these three Governorships is recorded in lively language, sometimes not lacking in piquancy, in the Madras newspapers of the time. But for the light they shed on the period, many an interesting feature of local or even general history would be absolutely unavailable to the student of history. It is here that the value of the newspaper is a record of historical interest is clearly perceived. Limitations of space do not permit me to cover more than a part of this decade.

Early Madras Newspapers.

We may first get a glimpse at the position of the Press during the period. The Press at Calcutta was apparently free while the Press at Madras was under a strict censorship. This censorship was apparently arbitrarily exercised, as all such censorship usually is and it is found to be the staple matter of complaint in the Madras Press of the time. Of this, more anon. The chief newspapers during the earlier part of the period were the *Madras Courier*, the *Madras Government Gazette*, the *Madras Gazette*, and the *Madras Herald*. These were weekly journals, poorly printed on poor paper. There was no daily newspaper yet in Madras ; this privilege it did not enjoy until sometime after the emancipation of the Indian Press in 1835. Of the weekly papers mentioned, the *Madras Courier* and the *Gazette* were older papers, dating back to the 18th century. The *Madras Government Gazette* was also an old paper ; while other papers had to bear letterpost charges for despatch, the *Government Gazette* enjoyed at first half-postage and then free postage. The *Male Asylum Herald*, sometimes called the *Asylum Herald* or simply the *Herald* was also an old paper with an established reputation. It was owned by the Directors of the Madras

Military Orphan Asylums. The *Madras Times* came into existence about 1833, almost immediately after Lord Bentinck tacitly permitted freedom of the Press in India. It was also a weekly paper. The *Madras Standard*, started on June 2nd, 1835, by the former Editor of the *Madras Times* was a tri-weekly. The last Journal was really the first fruit of the "free Press" era brought into existence by Sir Charles Metcalfe, much to the chagrin of the Court of Directors, in September 1835. But the Press in India was virtually free from some months previously, say from 1835. There is evidence, however, that the abolition of the Censorship at Madras, in 1833, had a marked effect on local Press activities. Some time before this, the Censorship had been abolished in Calcutta, and it was long a matter for complaint at Madras that what Calcutta enjoyed had been denied to Madras. When the Censorship actually went, it paved the way for the establishment of a number of newspapers in Madras. The *Madras Gazette* jubilantly wrote thus :—"It is gratifying in the highest degree to mark the rapid advances of the Madras Press since the abolition of the censorship. Discussions are now encouraged, which we dared not enter upon before. The propriety of public proceedings are manfully canvassed ; the measures of authority fearlessly questioned ; and the exercise of petty tyranny, the abuse of power, and the perpetration of injustice, boldly denounced, deprecated and condemned. These, however, though the greatest, are by no means the only advantages resulting to the public from the removal of all undue restrictions upon the press. There is evidently an increasing demand for the labours of individuals, who may feel disposed to court public opinion ; and, if these do not relax in their exertions, we may fairly augur that Madras will soon be declared no longer amenable to the contempt of the sister presidencies. Since the censorship has been abolished, we have seen, one by one, starting into existence–*The Carnatic Chronicle–The Madras Literary Gazette —The Seventh Day*—and now *the Madras Hurkaru.*" Of these, the *Carnatic Chronicle* deserves a word or two. It was what might be called a polyglot newspaper, printed in English, Tamil and Telugu, English articles being translated into Tamil and Telugu and *vice versa*. It was intended to introduce likewise the Hindustani. The preamble said that it would be "a Record rather than a Commentary," which, as a reviewer of the time put it, was "prudent in the infancy of a native paper". It was apparently the *first Indian* paper to be printed or published at Madras. The paper was well printed, the articles translated with sufficient accuracy and the tone was described as "moderate". This paper, however, did not live long. The *Madras Freeman's Journal*—the famous *Freeman's Journal* of to-day seems to have adopted its old Madras ancestor's name—of March 12, 1835, announced that "the *Carnatic Chronicle* is no more ; the press, types, cases, etc., have been seized and removed by a warrant from the Court of Commissioners," which seems rather an inglorious end to a paper which started so well.

The Censorship at Madras.

Now a few words about the Censorship at Madras. It attracted much attention at Calcutta, whose interest in Madras in this particular matter was extremely friendly. In the *Madras Courier* of the 23rd June, 1830, a column and a half of stars appear, indicating an erasure to that extent. The *Courier* wrote : "The exercise of the censor's powers at this Presidency, to which we have heretofore alluded, is still the topic of animadversion at the sister presidency." In the *Madras Courier* of the 23rd June, a column and a half of stars appear, indicating an erasure to that extent. In the *Bengal Chronicle* of July 9, the expunged matter is inserted, which turns out to consist of remarks on the new uniform coat approved for the British army at home. The only allusion to the Indian army was in the following sentence :—"In India, thank heaven ! the folly of these distinctions is unknown, and experience has proved to us at Assaye, at Mahidpore, and in Ava, that the Company's forces, if less externally brilliant, are not less internally brave." No part of the article appears to an ordinary reader the least objectionable. The person who sent the expunged matter to the Calcutta Editor accompanied it by the following letter :—

"You must not judge our journals merely by the presence or the absence of vacant space, or by the placing or the omission of stars; columns after columns have been struck out of the paper in one day, when no intimation of it has been given to the public. Often, too, when stars appear, they bear no proportion to the quantity struck out. The enclosed was struck out by the chief secretary from this morning's paper; I leave you to judge whether with reason. One article he struck out I ascertained was *on the State of Ireland*. India was never adverted to in it. One on *Lord Liverpool's Character*. It was a fair and dispassionate view of it. Another article was a letter on the administration at home; and he struck out also articles on the Indo-Britons, and on the Bombay Governor's dispute with the Supreme Court of that Presidency. In fact, on no question, whether connected with India or not, are the editors secure."

The different principles applied to the press in Calcutta cannot be better shown than by the insertion of the following remarks upon this exertion of authority, which occur in the *Bengal Chronicle*. "The censorship is, we need not tell our readers, wholly *illegal*: it has not a vestige of foundation in law. Europeans submit to it, because if they did not, they would be expedited over the surf by order of the chief secretary, enforced perhaps by a file of bayonets; but what if an Eurasian of talent and public spirit were to establish a journal under the very nose of the Government, and *under also* the protection of British law. What would become of the censorship then? While the proprietor or editor kept within the bounds of the libel law, he might laugh at and defy it. Do the Madras authorities then really think this a consummation devoutly to be wished? Do they think it one, for bringing about which they would receive the thanks of their honourable masters? We apprehend they would find themselves mistaken, if they cherish such a belief, and it may be worth their while, therefore, to consider whether the course they are adopting is not directly calculated to defeat the object they have in view." The Madras authorities, however, did not mind the gentle rebuke. The *Madras Gazette* of May 15, 1839, appeared with a paragraph pasted over with a paper covered with stars, indicating its cancellation by the Censor. In one copy, the starred cover, it would appear, so slightly adhered that it was easily removed and the paragraph expunged, appeared to be taken from an English paper! But the evils of Censorship came home to roost. It prevented even replies to caustic attacks on the Governor, which appeared not in the Madras but in the Calcutta papers. The *Madras Gazette* which suffered frequently from the over-friendly attentions of the Censor thus animadverted on this aspect of the matter in its issue of November 12, 1831:—"A great deal has been said and written on the subject of Free Press in India, and the Government of Madras has been frequently censured for not granting to us the same privilege which has been accorded to our contemporaries at Calcutta and at Bombay. Upon a calm review of the question we confess that, in our opinion, the liberty of the press at Madras would not be attended with the good expected from it, nor do we think that any serious injury would be occasioned by a removal of the censorship. Our brother editors of the *Government Gazette* and the *Courier* have too much good sense to admit into their columns the scurrility which now finds its way into the Calcutta papers, abusive of our present Governor, and we are quite sure that any attempt to sully our paper with such articles would be scouted as it deserved. We believe that in the Calcutta papers those articles are admitted on the supposition that they are true, and that in consequence of the censorship, there is no medium for giving vent to them at Madras. If the press were free, both sides of the question would be published. Persons in authority would not be assailed without being defended, and in all probability the true state of things would be understood. At present, some disappointed individuals gratify their angry feelings by penning strictures on Mr. Lushington; and the Bengal papers, anxious for local news, particularly when it is seasoned with personality towards men in authority, gladly publish them without satisfying themselves of the truth or falsehood of the observations. As those articles are unanswered, because they are seldom or never seen by a Madrasite, they are of course taken to be true, and the subject of them is considered to be blacker than the devil himself. With a free press at Madras, this would be prevented. As far as we are ourselves concerned, we prefer the present system, as we are relieved from much responsibility by it. It has often occurred to us whether, if a libel

was published in our paper, a prosecution might not be maintained against the censor ; whether he is not the party responsible and not the editor. This is rather an extraordinary state of things, and we should like to have our contemporaries' opinion on it—not that we have any intention of allowing anything libellous to appear in our paper, but by possibility such an event might unintentionally occur."

The *Madras Courier* of November 18, 1831, thus referred to the unsavoury subject, in view of the special request made to it for its opinion :—"Our contemporary of the *Madras Gazette* has recently alluded to the freedom of the press as at present existing at Madras ; we have often wished for an opportunity of expressing our sentiments on the subject, and as our brother editor seems desirous of knowing them, we must candidly tell him, that we do think that were we relieved from the irksomeness (to give it no worse a name) of submitting our lucubrations to the eye of a censor before publication, we would often venture to comment on public men and public measures in a manner that we cannot under existing circumstances attempt. No one can abominate and despise more than we do the vile and slanderous accusations that have of late teemed from the Calcutta press against the Government of this presidency ; we would long since have wielded our human quill in the refutation of these groundless and malicious charges ; but as few of our readers were acquainted with the nature of them, we thought it would not be necessary to lay before them the reply, when they had not heard the accusation."

The Governor referred to above was Stephen Rumbold Lushington, who succeeded Sir Thomas Munro. The *Bengal Chronicle* of August 27, 1831, thus obliquely hinted at the view distant Calcutta took of affairs at Madras :—"Private letters and accounts of individuals arriving from Madras concur in representing the state of public affairs at that presidency as very far from satisfactory, and we are given to understand that the general voice of complaint there against things as they are, though not, for obvious reasons very loud, is deep-toned enough to reach Calcutta, and to be likely to reverberate to England, and co-operate with other circumstances in bringing about considerable changes in the frame as well as the measures of that Government. The general relaxations and derangement of the whole machine of administration is spoken of in strong terms, and but one opinion seems to prevail on the origin of the Civil war or rebellion lately raging in Mysore, and by no means yet put an end to. Nearly similar discontent, arising from similar causes, of which the badly watched rule or misrule of intermediate authorities is the main one, is said to prevail in other provinces, particularly to the westward, where, as we are assured, the deficit of revenue (in Canara alone indeed) is little short of twelve or fifteen lakhs of rupees. It was rumoured that the Governor-General had not been left uninformed of the prevailing evils and of their causes, and that his lordship meditated a visit to Madras, with a view to inquire into the real state of things, and set matters right.

The Evil of the Censorship.

A change in the Governorship soon occurred by the taking over charge of the Presidency by Sir Frederick Adam, K.C.B., in October 1832. Within about ten days of the new Governor's advent, the Editor of the *Madras Gazette* resigned owing, as he explained it, to the publication of an offensive paragraph taken from the *Bengal Hurkaru*, which gave umbrage to the local Government, who, he said, were likely to use the powers with which they were armed. The attack was, as might be expected, a grossly personal one, charging the Government with being privy to the misappropriation of a large sum of money by a public official on the pretext of his having acted for a short time as Resident of Mysore, which was not a fact. The Editor, however, did not allege it, nor even defend it. He merely desired to contradict what had appeared in the *Bengal Hurkaru*, but in doing so, he had given publication to the original letter in his own columns. The Editor wrote thus on November 11, 1832 :—"The Editor supposed that the object of the late Order of Government, which removed the Secretary's Censorship of the Press at Madras, was to give freedom to the discussion in the papers at

this Presidency; so that if statements incorrect were advanced on the one hand, they might be easily contradicted on the other. If he has mistaken the intention of Government he regrets it; but cannot, under such circumstances, continue to be the Editor of a newspaper at Madras." The *Courier* pointed out that the re-publication was a piece of "hardihood", of which it would not have been guilty and added that the suggestion that the Editor of the *Gazette* was to be proceeded against was wholly groundless. "The consequence, we learn, has been," it remarked, "that instructions have been issued to the law officers of Government to take the necessary steps for the punishment of the publisher of so gross and wanton a libel. But we have not heard that 'the powers with which Government are armed, are likely to be enforced against him' as stated above." The sequel showed that the *Courier* was right. The Censorship was never again asserted in Madras and it died a natural death—its inutility killing it—long before the decree for the emanicipation of the Press was passed in 1835. The fact was that the Press in Madras had been practically free since 1830, sometime before Lushington resigned the office of Governor. This, however, does not mean that the writers in the Press were either treated with the large-hearted goodwill that is extended towards them in modern days. One case ought to suffice to indicate the difference between modern complacency and ancient stringency. In 1833, a private European soldier, named Limmer, was tried by a court-martial for alleging, in a letter published in the *Madras Gazette* of the 18th May (1833), a fraud in the Ordinance Department. The charge was as follows :— For "conduct prejudicial to good order and military discipline, in having at Madras, on the 15th May last, addressed a letter to the Editor of the *Madras Gazette*, for the information of the Right Honourable Governor in Council, falsely and maliciously stating that an extensive fraud had taken place in the Ordinance Department."He was found guilty and sentenced to six months' solitary confinement. The case created some sensation and the *Madras Gazette* apparently voiced local public feeling when it commented as follows on the topic :—"As a public proceeding we deprecate the charge as severe and anomalous. It is severe, inasmuch as the individual was brought to his trial for an extraordinary offence, and laboured under circumstances of peculiar difficulty to substantiate his statements ; it is anomalous, for he must be viewed in the light of a witness voluntarily undertaking to disclose the perpetration of fraud ; and to seize and try him, is as equitable and just, as if every person, who offered to make oath at the police office, was committed for attempting to injure others by preferring charges against them. We think that, if the men who were implicated by the prisoner's statements were first put upon their trial—if the prisoner's evidence was suffered to operate against them, and if, after all, they were acquitted, —the proceedings would have worn a very different aspect from that which they at present bear."

In 1836, the *Herald* had a somewhat heedless Editor at its head. His writings gave considerable trouble to its owners. The Directors of the Military Male Asylum, who were its proprietors, having communicated to Mr. J. Ouchterlony, the Editor (and also "Inspector" of the Press as he was styled) their resolution that several of the articles published by him in it "were highly objectionable, if not dangerous" and admonished him "to be more cautious in his remarks in future," that gentleman came to the conclusion that the resolution "jeopardized the independence of the paper, negativing the free expression of honest opinion, or leaving the power of its exercise in that precarious state, where the possibility of offence forces a paramount consideration over the utterance of conscientious sentiment", and relinquished the office.

STEPHEN RUMBOLD LUSHINGTON.

We may now turn to some of the more notable events of the first of the Governorships referred to above, and see what light the newspapers, whose liberation from control was so much coveted but not apparently equally well valued, throw on it. Stephen Rumbold Lushington's Governorship extended from October 1825 to October 1832.

During his period, the Presidency on the whole enjoyed the blessings of peace and prosperity. His administration was marked by vigour and good sense. Son-in-law and Private Secretary to Lord Harris, when Commander-in-Chief and later acting Governor of Madras, and an old Madras official, he loved his charge. He was particularly fond of holding imposing ceremonies in connection with the installation of Rajas and Chiefs; of honouring deserving Indian military officers and bestowing on them marks of distinction of indigenous origin, etc. He, however, was not always in the best of health and repaired to the Nilgiri Hills, which began to come into prominence during his period, and latterly he was compelled apparently to give up social functions, which made him lose touch with his own countrymen. This had, it is to be feared, an adverse effect on him. Complaints, sometimes veiled and sometimes open, appeared in the Calcutta Press directed against him, for none dare write in the Madras papers against him, for fear at first of the Censor, as we have seen, and afterwards apparently on account of the fear of wounding the susceptibilities of the powers that be, as it was styled. Hence the untoward resignations of the Editors of the "*Gazette*" and "*Herald*" I have referred to above.

Indian Central Cotton Committee.

The following is a Resolution (No. 484—Agri. dated the 22nd April, 1925) of the Government of India in the Department of Education, Health and Lands :—The Government of India have read with interest the second Annual Report of the Indian Central Cotton Committee for the year ending the 31st of August, 1924. The feature of the year is the progress which has been made in carrying out the Committee's research programme. In the Presidencies of Bombay and Madras, in the Central Provinces and in the United Provinces, the Committee has, by its grants, enabled valuable research work, aimed at combating diseases and pests of cotton and at improving its staple to be undertaken. The scheme for an Institute of Plant Industry at Indore, which the Committee has financed in co-operation with the Central India States, was sanctioned by the Government of India during the year, and a much needed Central Institute for cotton research has thus been provided. Technological research on cotton is being carried on under the Committee's own control, and the Technological Research Institute at Bombay commenced work during the year under report. The Spinning Laboratory was completed towards the close of the year, and was formally opened on the 3rd of December, 1924, by His Excellency the Viceroy, who also laid the foundation stone of the permanent Research Laboratory. Under the Committee's scheme for research studentships, nine graduates of Indian Universities have been appointed to studentships and are working under experienced investigators in various parts of India. The object of these studentships is to build up in India a corps of qualified research workers conversant with the technique of scientific investigation as applied to cotton problems and experienced in the methods of experimental research. The Cotton Transport Act, 1923, has been put into force in the Bombay Presidency so far as the principal long staple cotton areas are concerned, and the evidence so far received goes to show that as a result of the first year's working of the Act, the cottons of these areas have greatly improved in quality, and have commanded enhanced prices to the substantial benefit of the grower. The Committee can thus look back with satisfaction upon the progress made during the year and can face the future confident that a sure foundation has been laid for much useful work. The Government of India once more desire to acknowledge the valuable services rendered by the President, Vice-President and Members of the Committee and the work of the Secretary, Mr. B. C. Burt.

According to the *Bengal-Nagpur Railway Magazine*, the population of India is over 300 millions and the passenger figures for the year 1923-24 are :—

1st	class	.. ..	917,700
2nd	,,	.. ..	5,132,800
Inter.	,,	.. ..	8,128,900
3rd	,,	.. ..	502,851,100
Season and Vendeors		..	55,664,900
		TOTAL ..	571,695,300

Railways in India, 1923-24.

During the year 1923-24 the railways of India made solid progress towards recovery from the effects of the war period. Both as regards financial results and standard of efficiency the year may be said to have marked the turning point from a period of deficits and general inability to handle the trade of the country towards financial solvency and the provision of transportation in some degree comparable to the demand.

Financial Results of Working.

The total earnings of all railways increased from Rs. 105.65 crores to Rs. 107.80 crores. This figure includes railways owned by Indian States and companies for which the Government of India has no direct financial responsibility. The figures of receipts and expenditure for railways with which the Central Government are directly concerned are as follows :—

	In thousands of Rupees.
Traffic receipts from Government railways	94,65,52
Government share of surplus profits from subsidized companies' railways ...	23,64
TOTAL ...	94,89,16
Working expenses	61,05,28
Surplus profits paid to Companies ..	1,14,46
Interest on Government debt	17,53,79
Interest on Capital contributed by Companies	3,09,95
Annuities in purchase of railways ...	4,89,82
Sinking Funds	47,75
Land and subsidy to Companies ...	5,49
Miscellaneous	15,40
TOTAL CHARGES ...	88,41,85
NET GAIN ...	6,47,31

After meeting all interest and annuity charges Government, therefore, received a net profit of Rs. 6.47 crores as against a profit of Rs. 1.22 crores in 1922-23. On the capital at charge of the State lines the net receipts, that is, the gross receipts *minus* the working expenses, have in recent years given the following returns :—

	Per cent.
1913-14 ..	5.01
1921-22 ..	2.64
1922-23 ..	4.38
1923-24 ..	5.24

Analysis of Working Expenses.

The working expenses of State Railways decreased from Rs. 65.96 crores in 1922-23 to Rs. 61.05 crores in 1923-24. The summary below shows the distribution of this expenditure between the various departments :—

Department	Work	Amount spent in	
		1922-23	1923-24
		Rs. in crores	Rs. in crores
Engineering	Maintenance of way, works and stations	13.08	12.28
Locomotive	Maintenance and renewal of engines, cost of fuel and running stores and other expenses attached to provision of motive power	23.31	21.73
Carriage and Wagon	Maintenance and running of carriages and wagons	9.17	7.99
Traffic	Commercial and transportation sides of Traffic working, *i.e.*, booking of passengers & goods and arrangements for transport	10.58	9.77
Agency and others	Agents' office expenses, audit, stores, medical & police charges, etc.	4.99	4.47
Ferry	Steam boat expenses	0.28	0.26
Miscellaneous	Law charges, compensation, contribution to Provident Fund, etc.	4.92	4.74
Suspense	..	—0.36	—0.19
	TOTAL ...	65.96	61.05

Capital Expenditure.

The total capital outlay on all railways during 1923-24 was Rs. 21.32 crores out of

which Rs. 19.71 crores were spent on State-owned railways. The distribution of this latter figure between open line works, rolling stock and new lines, with the figures for the previous four years and for 1913-14, is given in the following table :—

Year	Open Lines			New Lines	Grand Total
	Works including Stores	Rolling-stock	Total		
	Rs. in crores	Rs. in crores	Rs. in crores	Rs. in crores	Rs. in crores
1913-14 ..	9.30	7.31	16.61	1.86	18.47
1919-20 ..	9.28	4.56	13.84	0.21	14.05
1920-21 ..	14.93	10.13	25.06	1.02	26.08
1921-22 ..	11.20	10.02	21.22	2.11	23.33
1922-23 ..	6.77	9.52	16.29	2.74	19.03
1923-24 ..	7.69	9.51	17.20	2.51	19.71

Lines opened During 1923-24.

A total mileage of 430.12 miles was opened during the year and consisted of :—

	Gauge.
253.34 miles ..	5′ 6″
155.11 ,, ..	3′ 3⅜″
21.67 ,, ..	2′ 6″
	2′ 0″

Lines Under Construction on 31st March, 1924.

A total of 759,02 miles of line was under construction at the end of the year and consisted of the following:—

	Gauge.
426.00 Miles ..	5′ 6″
308.24 ,, ..	3′ 3⅜″
24.78 ,, ..	2′ 6″
	2′ 0″

Value of Railway Materials Purchased.

The value of materials purchased by Indian Railways in 1923-24, excluding coal, coke, stone, bricks, lime, ballast, etc., showed a decrease of Rs. 3.80 crores as compared with the figures for 1922-23. There was a reduction of Rs. 2.9 crores in the value of imported stores purchased and of Rs. 90 lakhs in the value of indigenous stores.

Out of a total expenditure of Rs. 203 lakhs on goods stock Rs. 14½ lakhs represents the purchases of stock of Indian manufacture. The Railway Board placed no orders in India for the supply of wagons during 1923-24 owing to the prices quoted indenters received from firms in India being high as compared with quotations from firms overseas.

The expenditure of Rs. 14½ lakhs represents payments made on account of wagons built in India on orders previously placed, the total number of such wagons being 1,238.

The bulk of the total expenditure of 588 lakhs on permanent-way materials (Rs. 4.10 crores) was expended in India. Of the expenditure on rails Rs. 98 lakhs represents purchases of indigenous materials and Rs. 89 lakhs purchases of imported materials. The manufacture of rails in India is at present confined to the Tata Iron & Steel Company, but the output of this firm during the year under review was considerably in defect of the total requirements of Indian railways, and orders for the balance had to be placed abroad after the firm had been given orders covering the whole of their estimated output. The demands of Indian railways during the year amounted to about 120,000 tons as against 80,000 tons ordered and 70,000 tons actually produced by the Tata Iron and Steel Company. Consequently, orders for about 50,000 tons had to be placed abroad. The whole of the demands (35,000 tons) for State-worked railways were met from the supplies from the Tata Iron and Steel Company. The Railway Board's seven-year contract with the Iron and Steel Company provided for the supply of heavy section rails for State-worked railways at Rs. 130 per ton, but this was raised during the year to Rs. 156 so as to make the rate approximate more nearly to the rate for imported rails. This results in a payment of Rs. 9,10,000 over and above the contract price in respect to the supply to State-worked railways. The price of steel fluctuated considerably during the year, there being a difference of as much as Rs. 20 per ton on different dates.

Practically all the sleepers purchased were of Indian material, the payments on this account being Rs. 240 lakhs. Under the present arrangements the purchase of sleepers within particular areas is arranged for by the railway administration working in that area. Owing to the increase in difficulty of obtaining a sufficient supply of suitable hard-wood sleepers and to the rise in the price of sleepers it became necessary to examine the whole question of sleeper supply and methods of purchase with special reference to the possibility of utilizing new varieties of indigenous timber.

The Railway Board accordingly appointed a committee consisting of a senior railway officer and a senior forest officer in October, 1923, to make a comprehensive inquiry into the sources of supply of timber sleepers in India and Burma and the possibility of developing such sources. At the same time they were asked to report on the best methods of arranging for the purchase of such sleepers and of any means by which their cost might be reduced. The question of the advisability of using steel, iron and ferro-concrete sleepers was also considered by them.

Coal Supplies.

Out of a total of 6,184,054 tons of coal consumed by railways 1,692,875 tons were obtained from railway collieries. In view of the rise in the price of coal which seriously affects the cost of railway working the increase in the proportionate amount of coal obtained from railway collieries is one of considerable importance. In the more important collieries worked by railways the average cost per ton of coal ranged from Rs. 2.9 to Rs. 5.6. This cost compares very favourably with the price for similar coal in the open market and the existence of the collieries ensures to the various railway systems a regular and assured supply for a considerable portion of their requirements at a price which is independent of market variations. On the basis of the accepted and projected schemes for development in this direction it is hoped that railways will ultimately be able to obtain more than half their supplies from railway-owned collieries.

Manganese in Central Provinces.

At the annual meeting earlier in the day Mr. Coggan took up for his address the industry with which he is connected—the manganese industry—and that with especial reference to the Central Provinces, which has been rightly described as the manganese granary of India. Mr. Coggan continued :—To many people the mention of the word "manganese" conjures up visions of labels on the bottles in a chemist's store and few realize that its ores are among the most important minerals in nature, and the battleship and the great guns with which it is armed and the railroads on which commerce and industry and our daily communications depend, the knife and fork and the lowly pin of every day use, all depend for their existence on the apparently uninteresting blue black rock lying in heaps in our docks awaiting export to the steel manufacturing centres of Europe and America. It is also not surprising that the name of manganese should be unfamiliar to people in India, although this country is one of the most important sources of the world's supply, for it is but a quarter of a century ago that the commercial value of the deposits in this country was unknown, although their existence was long before known to the Geological Department, for the discovery of manganese in the Central Provinces was first alluded to in the records of the Geological Survey of India about 1859. The commercial value of the manganese deposits of India was first realized in 1892 when Mr. H. G. Turner, a retired Indian Civil Servant, began work in the Vizagapatam district of the Madras Presidency. The output from this area increased from 3,130 tons in 1893 to a maximum of 92,458 in 1900, since when there has been a gradual decline owing to some of the deposits having been worked down to a level where water difficulties have greatly reduced their productive capacity, so that

in 1923, even after the recovery from the stoppage due to the war, the production was only 22,524 tons.

Romantic Beginnings.

As in most mining ventures, the manganese industry has a romantic beginning, for the first trial shipment of some 1,000 tons to the United Kingdom from the Vizagapatam district made in 1893 lay at Cardiff for several months without a buyer, but in 1900, the way having already been prepared, the very first cargo from the Central Provinces to Middlesborough found a ready buyer and by the end of the year 25,000 tons of the Central Provinces ore found a ready market; seven years later the production reached nearly 600,000 tons. There were early difficulties encountered in establishing the industry, the chief of which were low prices and transport; low prices because of severe competition with Brazilian and Russian ores which had already established themselves in the world's markets while Indian manganese was still an unknown quantity; transport difficulties because the primitive bullock cart was then the only possible means of transport and the picture of unbroken strings of carts extending over many miles of fast disappearing metalled roads is still green in the memories of many of us—and also, perhaps, of the Public Works Department. With the realization of the quality of the manganese ores of the Central Provinces by the world's markets and with the encouragement and help of a far-seeing local government and of the railways, these difficulties to a large extent disappeared. With the demand for Central Provinces ore prices hardened, minimum, railway freights—though, unhappily, since increased—were charged, railway extensions were made, and private tramways constructed. These facilities are not yet adequate for the needs of the industry, but where are railway facilities ever adequate? The result, with varying fortunes, has been the establishment of a stable industry which supply the steel industry of the world with over one-third of its total requirements of manganese ore.

Uses of Manganese.

By far the most important of the uses of manganese is the manufacture of steel and at least 90 per cent of the world's production of manganese ore is used for this purpose. The great production of 84,900,000 tons in 1917 was due to the abnormal demands during the war. Since the war the situation has altered considerably and, whereas India has maintained her production at a little over 600,000 tons a year, Brazil has increased hers to nearly 300,000 tons, while the output from Russia, including Georgia, has fallen to the low level of 125,000 tons on account of political confusion and lack of transport and shipping facilities. But there appears to have been a revival, for the shipments from Black Sea ports during 1923 amounted to about 300,000 tons. To these sources of supply must be added the newly-discovered deposits in West Africa (Gold Coast). In addition Egypt has become an important producer, the output for 1923 being over 130,000 tons. The ore from the Gold Coast is in part first grade. The Brazilian deposits are among the largest in the world, but the output is practically entirely absorbed by America and, owing to defective railway facilities, America is obliged to turn to India and Russia to supplement her supplies. Since the beginning of the war, India and Brazil have practically supplied the whole world. Whilst there have been wide fluctuations in the world's production the Indian production has been steadily maintained.

Uses in India.

The question of the utilization of manganese ore in India has been the subject of much controversy, but it is admitted that owing to the high phosphorus contents of the greater portion of the ore available in this country as well as in the Indian coke, normally, India can never be a large producer of ferro-manganese unless economical electric production becomes possible. It has, so far, not been found possible to produce ferro-manganese containing less than 5 to 6 per cent phosphorus, whereas the highest limit of phosphorus acceptable abroad in normal times is 3 per cent. India must, therefore, be content to produce by careful selection of her ores and fuel little more than the quantities of ferro-manganese necessary for her domestic consumption. Her annual consumption of steel is about a million tons, and at

present she produces about one-eighth of that quantity. It is expected that this rate of production will shortly be increased to about 400,000 tons and the quantity of manganese ore that would be required for the production of this quantity of steel would be about 10,000 tons of Central Provinces ore, which, by reason of its high manganese and low phosphorus contents, is the only Indian ore that is suitable for the successful local manufacture of ferro-manganese. As stated by Dr. C.S. Fox, in his report on the mineral resources of India for a domestic steel industry, this demand " could be met and almost forgotten by the producers of manganese ore in India". The same statement would apply even if India produced the whole of her own requirements of steel. No accurate estimates of the quantities of manganese ore available in India have been made but in the Central Provinces they run into many millions of tons and, seeing that one million tons would be sufficient to supply the requirements of India for fifty years, even if she manufactured the whole of her own requirements, there need be no apprehension that the export of the raw material from India is likely to affect her future supplies for many hundreds of years to come.

Petroleum and Coal.

Proposing the toast of " the Mineral Industries of India " at the dinner in the evening, Sir Alexander Murray also referred briefly to manganese ore. Remarkable expansion,he said,is noticeable in the petroleum and manganese ore industries which rank in value second and third to coal with totals of £7 millions and £2¼ millions respectively as compared with a few thousand pounds sterling each in 1898. Coal still continues, however, to be our principal mineral which for the past dozen years has continued steadily at the head of the list, averaging about 40 per cent of the total value. From 4½ million tons in 1898, the output by 1906 increased over 100 per cent. In 1918 20¾ million tons were raised and it is worthy of remark that while that year's output was valued at only 6 millions sterling, an output in 1923 of a million tons less was valued at £9¾ millions sterling. The peak raisings were in 1919 when 22½ million tons were produced.

Iron Exports.

Turning to iron, Sir Alexander found that during the midle of last century repeated efforts were made in Southern India to introduce European processes for the manufacture of pig iron and steel but without success, owing largely to lack of suitable fuel. The concern now known as the Bengal Iron Company commenced operations at Kulti in 1875, but had to close down in 1879. The works were restarted by Government in 1880, but it was not until 1889 that, with the company reconstructed and the works remodelled, private enterprize took the reins again and went on to such success as has been achieved under the present able management. This company produced an average of less than 40,000 tons of pig iron per annum until 1911, when the Tata Iron and Steel Company started operations at Jamshedpur. From that time onwards the Bengal Iron Company had gone on increasing its output until in 1923 it produced 120,000 tons of pig iron and 42,000 tons of iron castings. Add to it the 392,000 tons of pig iron produced by the Tata Company and other 78,000 tons by the Indian Iron and Steel Company which started operations in November, 1922, and we got an output of pig iron in India excluding Mysore for the year 1923 of about 590,000 tons. During that year the Tata Company produced 151,000 tons of steel including rails, which it had begun manufacturing in 1913. If we remember that the pre-war imports of pig iron averaged 13,000 tons only, we need not be surprised to find the country now suffering from indigestion so far as the consumption of pig iron is concerned. A redeeming feature is the fact that India can produce so cheaply that it is now exporting pig iron not only to Japan, but also to the West Coast of America and even to England. Exports of pig iron to Western countries, however, can prove only a very temporary relief and we must all watch with interest the struggle to replace the million tons or so of iron and steel of foreign manufacture annually imported into India with this country's own products manufactured in its own works from its own materials by its own labour.

Finance of Local Bodies in Bombay.

"The finances of the Municipalities show signs of slight improvement, though they can hardly be said to be satisfactory" says the Examiner of Local Fund Accounts in the last report of the Local Audit Department. "There is a general disinclination to raise money by direct taxation and whatever little progress is made in the matter of strengthening their position is in the direction of increasing revenue from octroi or terminal tax. Some municipalities have been compelled by the sheer force of economic necessity to revise taxes other than octroi, but their number is small." The Municipalities that ignored the financial principles laid down by Government in the matter of Conservancy and Water tax are not small in number with the result that forty-two municipalities, including Broach, Ahmednagar, Satara City, Belgaum and Shikarpur had expenditure in excess of revenue.

The accumulation of arrears of taxes is a chronic complaint which shows no signs of improvement. The total arrears of all the 159 municipalities reached the high figure of Rs. 15.3 lakhs, representing over 16 per cent of the receipts from taxation. The following municipalities are among those with the largest arrears: Ahmedabad Rs. 1,22,472; Surat Rs. 1,78,963; Bandra Rs. 1,26,812; Sholapur Rs. 52,254; Kurla Rs. 28,001; Bijapur Rs. 26,305.

"The reasons for this unsatisfactory state are numerous but all centre round the inherent unwillingness of the office-bearers to adopt even the minimum of coercive measures provided in the Municipal Act", continues the Examiner. "Notices are issued but are not complied with for several weeks. Warrants are signed by theExecutive Officer, but are left unexecuted evidently due to pressure from some councillor or other." There is a growing tendency on the part of many municipal councillors themselves to delay the payment of the taxes.

The orders of 1920 emphasizing the necessity of prompt payment of municipal dues, particularly by the councillors themselves, have not produced the desired result. The remedy for this state of affairs, says the Report, can only be found in the sense of public duty which should develop to a greater extent first among the councillors, and then among the tax-payers themselves. Publicity is a factor which may produce the desired moral effect.

The number of Municipalities in which embezzlement and misappropriations took place is 26 compared with 23 last year. Most of the irregularities are in connection with the collection of revenue, in regard to which greater supervision is said to be necessary especially when the pay of the men entrusted with the collection is not sufficiently high. There has been slight improvement in the work of preparing bills and regulating increments, says the Examiner, speaking of the educational expenditure of District Local Boards. Owing to increased familiarity with account rules, etc., it is not now found necessary to order such large recoveries as have until recently been usual. But in two districts the undisbursed pay of school masters was allowed to remain with Taluka masters for years.

Commenting on the Report the Government of Bombay observe: "The extraordinary large number of embezzlements and misappropriations brought to light by the Examiner shows a lamentable lack of supervision on the part of the office-bearers of Municipalities. The necessity of a close supervision of the municipal subordinate staff cannot too strongly be emphasized. The instances of misappropriations and other irregularities clearly show the necessity of a close supervision and control on the part of non-official members in the execution of works. The Boards should be advised to take criminal proceedings invariably against the persons concerned, and the advisability of dismissing them from service should be seriously considered. The Collectors should see that the Boards give effect to these recommendations." Government note with regret the growing tendency among local bodies, especially among Municipalities, to delay the disposal of audit notes. The necessity of prompt disposal is great.

Motor Cars in India.

According to the *Commerce Reports* of the United States Department of Commerce, during the eleven fiscal years since that beginning April 1, 1913, when motor-car imports were first separately listed, 55,025 cars were imported into British India. Dealers estimate that the probable number now in operation is about 50,000 ; they state that the rate of depreciation in India is not so rapid as in the United States, owing to the fact that long-distance touring is limited at present and that cheap labour is abundant to keep the car externally in good condition. Only partially off-setting these factors is the lack of modern servicing facilities. It is upon imports, rather than upon approximate registrations, that manufacturers and exporters should base their estimates of the potentiality of the Indian market. The following tables show imports of passenger cars and trucks into India and Ceylon during the eleven years since April 1, 1913 :—

IMPORTS OF PASSENGER AND COMMERCIAL CARS INTO INDIA FROM APRIL 1913, TO MARCH 13, 1924.

Fiscal year ended March 31.	Number of Passenger Cars from—					Total Commercial Cars	
	United Kingdom	United States*	France	Other countries	Total	Number	Value
							£
1914 ...	1,689	868	111	232	2,880	76	38,049
1915 ...	1,350	510	54	91	2,005	47	22,607
1916 ...	787	2,136	126	72	3,121	121	66,296
1917 ...	489	4,169	62	58	4,778	252	113,286
1918 ...	39	1,222	1	20	1,282	15	6,631
1919 ...	21	368	...	11	400	8	4,388
1920 ...	448	9,353	...	121	9,925	1,229	‡4,835,100
1921 ...	2,541	10,120	192	†2,579	15,432	2,885	‡22,343,190
1922 ...	790	802	158	†1,145	2,895	580	‡2,948,559
1923 ...	449	1,386	61	†2,427	4,323	480	‡2,176,574
1924 ...	1,005	2,865	153	†3,961	7,984	1,044	‡2,501,411
Total ...	9,588	33,799	921	10,717	55,025	6,737	...

* The country of origin of many of the cars from the United States during the years prior to 1921 was Canada. † Includes imports from Canada of 1,938 cars in 1921, 576 in 1922, 1,846 in 1923, and 3,290 in 1924. ‡ Rupees, for which exchange average will be found in the succeeding table.

IMPORTS INTO CEYLON.

IMPORTS OF PASSENGER CARS AND TRUCKS INTO CEYLON, 1913–1923.

Calendar year	Passenger Cars		Lorries	
	Number	Value in rupees *	Number	Value in rupees †
1913 ...	407	‡24,21,139	§	§
1914 ...	459	‡26,03,769	§	§
1915 ...	273	16,69,954	23	2,17,835
1916 ...	522	17,07,400	39	6,12,407
1917 ‖ ...	75	2,37,454	10	1,33,117
1918 ...	5	11,711	10	1,37,444
1919 ...	193	5,09,272	46	1,92,717
1920 ...	816	28,05,435	109	9,32,236
1921 ...	387	21,45,917	7	24,083
1922 ...	487	16,03,555	44	2,04,236
1923 ...	968	24,73,439	318	8,91,689
Total ...	4,592	1,81,89,045	606	33,45,764

CARS FROM AMERICA.

Imports of automotive products from the United States to India during the last eighteen months show a pronounced upward movement. Even the first six months of 1924 materially exceed the rate of exports established during the twelve months of 1923. The total number of automotive vehicles, including passenger cars, trucks, and motor cycles, shipped from the United States to British India in the first half of last year was 1,539, as compared with 2,453 in all of 1923.

* The annual average of the rupee exchange value was as follows : 1913, $0·32 ; 1914, $0·33 ; 1915, $0·33 ; 1916, $0·33 ; 1917, $0·34 ; 1918, $0·37 ; 1919, $0·40 ; 1920, $0·39 ; 1921, $0·26 ; 1922, $0·29 ; 1923, $0·31. † Includes value of parts. ‡ Includes lorries and parts. § Prior to 1915. ‖ Figures for lorries and parts are not separately listed. Figures cover only January—July ; those for August December not available.

Cars and trucks increased in the same general ratio, but motor cycles fell off slightly. The total value of automotive exports reached $1,238,813 in the half-year period, compared with $1,951,360 in 1923. Statistics covering the eighteen months' shipments are contained in the following table disclosing imports of automotive products from the United States to British India, during the calendar year 1923 and the first six months of 1924 :—

Classification	1923		First six months, 1924	
	Number	Value	Number	Value
Passenger cars, except electric :		$		$
Value up to $500 ...	782	350,490	575	257,409
Value $500 to $800 ..	730	486,471	531	362,350
Value $800 to $2,000 ...	477	489,894	217	234,005
Value over $2,000 ...	9	22,398	10	27,646
Motor trucks and buses, except electric :				
Commercial cars ...	*	*	35	28,214
Motor trucks and buses—				
Up to 1 ton ...	72	61,733	20	15,122
From 1 ton up to 2½ tons ...	97	106,233	45	54,808
Over 2½ tons ...	20	28,778	2	4,000
Electric trucks and passenger cars ...	2	5,000	2	5,147
Parts of motor vehicles, except engines and tyres :				
Unit assemblies ...	...	2,380	...	1,112
Parts and accessories ...	...	329,830	...	
Parts for assembly ...	...	†	...	8,734
Parts for replacement ...	...	†	...	157,099
Automobile accessories ...	...	†	...	48,864
Automobile service station appliances, n. e. s. ...	...	1,116	...	767
Motor cycles ...	264	64,353	102	24,641
Automobile engines :				
For passenger cars ...	8	1,836	6	1,895
For motor trucks and buses ...	2	848	...	...
Total ...	‡2,453	1,951,360	‡1,539	1,231,813

* Reclassified and listed separately after January 1, 1924 ; covers a light car used primarily for delivery and light trucking and not exceeding $800 wholesale price. † Not listed separately prior to January 1, 1924. ‡ Motor vehicles exclusive of engines.

Imports from Canada.

With the above figures there should be taken into consideration the large volume of imports from Canada. These shipments represent cars and trucks of American design, made in the Canadian branch factories of United States companies. During the first six months of last year they amounted to 2,317 passenger cars, valued at $994,801; 632 trucks, valued at $237, 707 ; and accessories worth $102,328. Adding these figures to those for the United States, the total value of American automotive shipments to India in the first half of 1924 is seen to be $2,566,649.

A Necessity in India.

From the data regarding India's purchase of automotive products and her need for motor transport, one fact emerges clearly. This huge mass of people, who move by the millions, in billions of miles, and who cart material by the millions of tons in billions of miles, must find—as the American people have found—the motor car a necessity in pushing forward into the economic civilization of to-day. India is thus a market of rich promise for the American automotive industry.

Every one of "the wild men of the Clyde" is a total abstainer.—*The Rev. James Barr.*

There is a rooted idea in England that any foreign contribution to efficiency is a scandal which cannot be tolerated.—*Mr. Frank Gill.*

Financing of Branch Railway Lines.

The Governor-General in Council, with the sanction of His Majesty's Secretary of State for India, is pleased to issue the following orders on the subject of Financing of Branch Lines, in supersession of all previous orders on the subject.

1. Branch and Feeder Lines are constructed under an agreement by which the State guarantees a minimum return on the capital, or alternatively, undertakes that the line shall receive, out of the earnings of the main line from traffic contributed by the branch, such a sum, known as a rebate, as will make up the total earnings of the branch to a given sum, while the branch in each case shares with the main line any profits exceeding the guaranteed minimum.

2. This method of encouraging the construction of lines originated 30 years ago simply because the Government of India was unable to furnish the necessary capital.

3. The Acworth Committee pointed out that this method, while enabling lines to be built which would otherwise not have been built, has no other merit. The financial terms usual before the war are now quite inadequate and if the system is to continue they will have to be revised. All the witnesses before the Committee who asked for a revision of the terms admitted that, if the main line were in a position to build a given branch itself, they would prefer that it should be done by the main line rather than that it should be done as a separate undertaking.

4. Amongst the disadvantages pointed out by the Committee are the following :—

(*i*) The Branch Line Company is usually a fifth wheel to the coach. It implies in some cases a separate construction staff; it always implies a separate Board of Directors, and separate accounts.

(*ii*) Where the branch is worked by the main line, if its Directors feel that the management is unsatisfactory, they not only make representations to the main line administration, but in the last resort can appeal to the Railway Board which does not make for harmony.

(*iii*) Capital raised by a small private undertaking, even with a Government guarantee, will cost more than money raised by the State.

(*iv*) Inconceivable confusion results from the multiplication of independent Railway Companies—each company, small or great, desires to reserve for itself a separate sphere of influence; and jealously demands that, if any new comer intrudes into that sphere, he shall pay toll to the original concessionaire. This only complicates a situation which ought to be considered solely from the point of view of the public interest. New proposals for the extension or connection of lines by small independent companies are either refused owing to protests by the old company or only permitted on a basis of elaborate accounting between the new company and the old for the profits which hypothetically would have belonged to the old line had the new line not been opened.

5. The only arguments urged in favour of the Branch Line Companies were :—

(*i*) The money had been raised which the Government of India was unable to furnish.

(*ii*) That a claim was made that the Branch Line Company obtained from local sources money that would never be subscribed to a Government loan.

(*iii*) That there may be cases of a Branch Line of smaller gauge *worked independently*, which the Branch Line Company can operate more economically than a main line.

6. The Acworth Committee, therefore, so far from approving of this system considered that the aim of the Government should be to reduce by amalgamation the number of existing companies and that it should only be in cases where the State cannot or will not provide adequate funds that private enterprize in this direction should be encouraged.

7. The disadvantages pointed out by the Acworth Committee require to be even further amplified. The existing Branch Line Companies have ceased for some time to raise additional capital for capital requirements. They have either obtained overdrafts from various Banks for this purpose at heavy rates of interest or issued debentures at special rates of interest (usually about 7 per cent)

or in several cases asked for money to be advanced to them by the Railway Board. So far, therefore, from reducing the amount that the Government of India have to raise in the open market, they are at present increasing that amount.

8. Another serious disadvantage which is not mentioned by the Acworth Committee is that the main line usually works the Feeder or Branch Line for a remuneration which, in most cases, is limited to a maximum of a fixed percentage of the gross earnings of the Branch Line (usually 40 per cent or 50 per cent)—terms of remuneration which at present are grossly inadequate. The result of this arrangement is that many of the main lines whose working expenses are from 60 to 80 per cent of the gross earnings are saddled with heavy expenditure which ought to have been debited to Branch Line Companies. Where the Branch Line Companies are " successful ", that is, where the shares stand at a high figure, their profits are inflated owing to their working expenses being thus artificially reduced. Again, where in the case of less " prosperous " Branch Line Companies the Government has to make a direct subsidy in order to make up the guaranteed interest on the capital, the amount paid by way of subsidy does not reveal the true loss of the Government in connection with the Branch Line Company. To this subsidy should be added also the additional loss incurred from the main line working the Branch Line at less than the actual cost. Even this, however, does not give a complete statement of the loss sustained by Government in connection with these Companies. These Companies have been supplied with land free of charge and the cost of such land is not taken into account either in the Capital or the Revenue Accounts of the Companies concerned.

9. The only real argument in favour of these Companies is that they must be utilized in cases where the Government itself is unable or declines to raise the necessary amount of capital for new constructions. It is doubtful whether such a position is likely to recur in the future. It is admitted that to use the agency of these Companies is a far more expensive method of raising money for the construction of railways than direct Government loans can ever be. The amount of assistance given by Branch Line Companies in the past has been trivial : the total amount of capital raised through the agency of Branch Line Companies has only been about Rs. $10\frac{3}{4}$ crores—an amount which in itself is less than the lapse that occurred last year in the provision for capital expenditure in the Railway Budget.

10. The difficulties and complications now experienced in connection with these Branch Line Companies are out of all proportion to the insignificant financial facilities offered by the Companies. The Government of India have therefore decided that theBranch line policy should be abandoned and that an endeavour should be made to reduce the number of the existing Branch Line Companies. If on any occasion the Government of India should be unable to find funds for construction (which is not the case at present), and should it be considered advisable to tap fresh sources for subscription to railway loans by offering terms different from those given to the ordinary Government loans, that is, by offering not only a fixed rate of interest but a share in the profits of a particular Branch Line, there appears to be no particular advantage of using a financial half-way house specially to float a loan on such terms ; there appears to be no reason why the Government should not float the loan direct. But it will probably be found sufficient to raise short term debentures at a high rate of interest—to be liquidated when the loan market is favourable—a procedure adopted now by the Branch Line Companies, but at a higher rate of interest than would be necessary for the Government.

11. There remains the case of the District Board Railways for which some of the capital or the security for the capital is secured by a special cess levied by the District Board throughout the district.

The Acworth Committee pointed out that where a District Board was the promoter of a new Branch Line, considerations other than purely commercial came into play with the result of further complications and

confusion. In a footnote to the report they referred to the views expressed by the Madras Government who had drawn attention to a case in which, although no short circuiting was involved, there had been a delay of over 10 years in arriving at a decision in regard to the terms for working a District Board Railway by the South Indian Railway Company. The amount of capital raised by District Boards for such lines has been only Rs. 137 lakhs while the amount raised by Company lines subsidized by District Boards amounts to Rs. 2¼ crores. These amounts are insignificant as compared with the total capital raised by the Government and it is clear that the relief afforded to the Government of India in raising the loans is quite disproportionate to the great complications which have resulted in the working of the railway administration. Loans raised direct by the District Boards do not relieve the market of the Government of India ; the money is ultimately borrowed from the Government of India.

12. The legal position regarding the powers of District and Local Boards in the matter of railway construction and management depends in part on the Indian Railways Act, 1890, which, in the absence of express exclusion of its application, extends to all District Board railways and, in part, on the nature of the provision made in the matter in the District or Local Boards Act of the province concerned. It is only in the Madras Presidency that the question has assumed prominence and it will suffice to indicate briefly the nature of the provisions contained in the Madras Local Boards Act, 1920. Action under section 113 of that Act can only be taken "with the previous sanction of the Government of India". Having obtained such sanction, a District Board may either itself construct and maintain a railway within, or partly within, the local area under the control of the Board, or may subscribe to any debenture loan raised by the Government of India or by any other local authority or by any company for the construction or maintenance of any railway which the Board considers likely to be of benefit to the district, or may guarantee the payment from the district fund of such sums as it shall think fit as interest on capital expended on any such railway (that is, whether the railway is constructed by the Government of India or by any other local authority or by a Company).

Section 236 of the same Act provides that the accumulations of a local railway cess may be utilized for all or any of the purposes specified in section 113, including the guaranteeing of payment of interest on capital spent on a railway.

A District Board in Madras, therefore, can guarantee the payment from the district fund of the money sufficient to make up the minimum interest on capital expended on a railway within its area whether such railway is constructed by the Government of India or by a Company, the only disadvantage attaching to this particular form of guarantee being that the Act does not make the payment of the guaranteed interest a first charge on the District Board Fund.

13. The Government of India could not reasonably use their powers under the Indian Railways Act, 1890, or under, *e.g.*, section 113 of the Madras Local Boards Act, 1920, to prevent a District Board or a local body from constructing a light railway or a tramway which had no physical connection with any existing main line and which that local body proposed to work itself or through a local company. But as things stand at present there is no reason for continuing the practice under which District Boards are allowed to make money out of Branch Lines connected with a main line when they themselves cannot make any arrangements for the working of the lines and require to have them run by the main lines.

14. These District Board railways must not be confused with the light and feeder railways which constitute a provincial subject under the Devolution Rules. The provincial subject in question comprises : "light and feeder railways and extra-municipal tramways in so far as provision for their construction and management is made by provincial legislation." That is to say, it comprises only individual light or feeder railways or extra-municipal tramways for the construction and management of which specific provision has been made by an Act of the local legislature of the province

concerned. Hitherto, no such legislation has been enacted with the result that the entry in question in the provincial schedule, as also the qualifying words in entry 5 (a)* in the central schedule, have no operation, and all existing railways of every description are included in the central subject defined in the last-named entry. It should also be observed that the provincial subject in question is "subject to legislation by the Indian Legislature in the case of any such railway or tramway which is in physical connection with a main line or is built on the same gauge as an adjacent line," the effect being that a provincial bill designed to provide for the construction of a light or feeder railway or extra-municipal tramway in physical connection with a main line or built on the same gauge as an adjacent main line would require the previous sanction of the Governor-General under clause (*f*) of sub-section (3) of section 80-A of the Government of India Act; and it may be presumed that few occasions are likely to arise in which provision will be made by local legislation for the construction of a light or feeder railway not answering one or other of these descriptions.

15. The proposals set forth in this Resolution are not designed to evade the legitimate operation of the legal position described, in the case of District Board railways, in paragraph 12 and in the case of provincial light and feeder railways, in paragraph 14; but it follows from the proposals that Local Governments and District or Local Boards should not, in the absence of special circumstances, be encouraged to build branch or feeder lines. In other words, the normal procedure will be the construction by the Government of India, or, at its cost, by a Company, of a branch line which a District Board or Local Government desires to have constructed and is prepared to guarantee. But, should the railway programme not permit the construction of such a line within a reasonable time, the possibility of permitting a District Board or Local Government to construct it from its own funds would require consideration.

16. The above proposals relate to the procedure adopted in the past and the procedure which it is proposed to adopt in the future for the financing of the construction of branch or feeder lines expected to prove remunerative from the point of view of railway earnings only. But there are cases where the Local Governments or local authorities may desire that a line should be constructed which will not be remunerative on railway earnings and the construction of which is desired by them for purely local reasons on account of the administrative advantages it is likely to confer or for the development of a particular area. It is proposed that in future the Railway Board in such circumstances should have power to arrange for the construction of the line from railway funds if the Local Government or the local authority guarantees the Railway Board against loss. The guarantee would be to the effect that the local authority would make up the difference between the net earnings and the interest and other charges payable. As it is not desirable that the Central Government should make any profit out of such contributions by local authorities, it is also proposed that where contributions have been made by a local authority for this purpose the repayment of such contributions should be a first charge on any net profits subsequently realized from the line, should the line prove remunerative.

17. The Central Government must, however, retain the power to decide whether a line is to be built or not; the proposals in the preceding paragraph must not be taken to imply that a Local Government by giving a guarantee can require the Railway Board to construct a line. Proposals of a Local Government might run counter to the general railway policy or might take the form of short-circuiting railway traffic and so lead to a reduction of receipts from existing lines.

18. These proposals have been circulated to Local Governments and have been generally welcomed by them as affording a suitable method of reconciling central and local interests and of providing for local bodies and Local Governments a method of securing the construction of railways which may be required for purely local reasons,.....

*"Railways and extra-municipal tramways, in so far as they are not classified as provincial subjects under entry 6 (*d*) of Part II of this schedule."

Helping the Hand-Loom Weaver.

For some fifteen years past Government has been trying to secure the introduction of better and more economical methods and appliances in the hand-loom weaving, dyeing and calico printing industries ; and when the post of Director of Industries was abolished as the result of the vote of the Legislative Council at the Budget session last year, the Assistant Director was retained with the designation of Superintendent of Industries in order that the work that had already been done in this direction should not be allowed to lapse.

Hand-loom weaving is still a very important industry in the Bombay Presidency, for it supplies more than one-quarter of the total cloth required by the population of the Presidency and as the Registrar of Co-operative Societies pointed out two years ago, during the past thirty years hand-looms have increased their output almost as fast as power-looms. Under the control of the Department of Industries there were four weaving schools and seven weaving demonstrations in progress and these were continued during last year. One of their functions is to help in the introduction of the fly shuttle loom, which increases the output of the individual weaver by 40 per cent. In these schools instruction is given to boys in weaving cotton and mercerized bordered sarees, silk sarees, dhoties, shirtings, etc., of somewhat complicated and fancy designs which serve as good object lessons to other weavers working in the vicinity of the schools. All these schools are equipped with Khadi looms for beginners and saree looms for advanced pupils. It may be noted that although last year was not a prosperous one for the mill industry, yet it was fairly favourable to hand-loom workers who, at centres where silk and other fancy cloth was prepared, could earn from Rs. 50 to Rs. 60 a month, while on Khadi and other cotton looms the wages did not amount to more than Rs. 35 a month.

These are moved from place to place when a sufficient number of fly shuttle looms have been introduced in a particular centre. The demonstrator is provided with two fly shuttle looms on one of which he works and demonstrates and on the other any weaver wishing to practise or learn the working of the fly shuttle slays is allowed to do so. The experiment of training agriculturists in hand-weaving as a spare time occupation was continued at Hoshalli in the Dharwar District. Accommodation was provided for 8 agriculturists at a time in the school and as a result six of the first batch took up hand-weaving seriously by purchasing fly shuttle looms and the others have announced their intention of doing so. At Hulkotti where the experiment was carried out in the previous year two dozen fly shuttle looms were introduced among the agriculturists. The Weavers' Association of Dhulia petitioned to the Department to open a demonstration of automatic looms and allied appliances. This was done but the weavers could not see their way to purchasing the machines which are somewhat expensive. A hand-sizing machine, however, was found to be so great an improvement on the existing methods that arrangements were made to produce copies of it locally. The Department is now demonstrating a number of machines at Sholapur, a large centre for hand-loom weaving where hundreds of fly shuttle hand-looms are found to work economically in competition with power mills. The hand-loom weaver can compete with the power mill worker so far as the weaving operation is concerned, but his preparatory processes such as winding, twisting, doubling and sizing are slow and defective and form a considerable handicap.

An illustration of the usefulness of the demonstration work carried out by the Department of Industries is to be found at Bhiwandi in Thana District. In the year 1916 weaving schools were opened here and a number of fly shuttle looms introduced amongst the weavers. A census and survey of the hand-loom industry in this town taken last year show that out of a total number of 1,800 hand-looms nearly 1,500 were fitted with fly shuttle slays. This illustrates how improved working methods continue to spread in a weaving locality even after the weaving school which introduced them on a small scale has been closed.

Managing Men.

By Frank H. Grace.

Managing a business is no light task—simple though it may seem to the men behind the machines in the factory. "The man at the top of the tree," as a friend of mine aptly puts it, "is exposed to the full blast of the wind." Responsibility and power are, to some, desirable things, but they demand their toll in worry, and often induce lack of health, and it is worry—not work—which kills. When I was in the Army, and had nothing to worry about, I put on weight. It has all gone now—but none the less, I am happier! It is not always the most experienced, the most knowing man, who can make a success of management. The best printer, I know, was a failure as a manager—he lost his head in emergencies, lost his temper in disputes, and lost his men through an excess of discipline. The best manager is often the one who can stand the strain, who can decide quickly, who can choose his men and keep them. The latter qualification is, I think, the most important of all.

The accountancy side of a business is a comparatively simple matter, and competent book-keepers are easy to obtain. It is, however, more difficult to get a man who can successfully handle men—both employees and customers. A staff without loyalty is a staff without enthusiasm and energy—and nothing breeds disloyalty quicker than an overbearing and too masterful chief. Some people's ideas of "bossing" seem to be based on Army methods, but Army methods won't work in business. In the Army you always had at least two men to do one man's job, and insubordination meant prison or worse. In business the worst you can do is to give a man the sack; if he has been driven up to a point he doesn't worry about that much; and if he is a really good man he cares even less. If you find that your staff can't work with you, or that they are constantly leaving, you may be sure something is wrong with your methods—and that you are the one who is really at fault.

There is more than one way of getting a thing done. Courtesy, even to the humblest subordinate, always pays. You can order a man to do something in such an abrupt dictatorial way that he carries out your orders in a reluctant, ca'canny fashion, difficult to detect. You can, on the other hand, so manage him that he at once becomes your willing helper. The idiosyncrasies of each individual need to be studied. Human beings are funny creatures, and want humouring at times, and it is up to every manager to know his staff well. A staff driven by fear is an inefficient one. They simply put up with you because they have to, and get out at the first opportunity. The more intelligent the man the more he needs riding with a firm but tactful and gentle rein. Ridden with a loose one he may slack, but with a tight one he will rebel.

A famous business expert said recently that where there is peace and contentment amongst the workers output goes up. This is surely true. A contented and well-managed staff will happily meet any demands you make upon it in times of great pressure, and the happy worker, who is left alone and not badgered by a too fussy principal, will turn out twice as much as the one who is always wondering what "the boss" will complain about next.

Always be open to suggestions from your subordinates, and never roughly turn them down. The ideas may, at the time, be worthless, but the next suggestion that comes along may be more than worth while. Besides, it indicates that your staff is thinking about the business, and that alone is worth commendation.

Another good point in management is not to restrict too much the capacity and energy of your men. If they show ability to do better things, give them their chance, and in so doing you may lighten your own task.

Managing customers is as difficult as managing men, for customers always have the last word, or at least you are wise to let them have the last word if you want to keep them. Quite recently I was offered the post

of Sales Manager for a large publishing concern, and the Managing Director brought before me the man whom I was to supersede, but whom they were still retaining in a subordinate position. The man was competent in all respects save one—he had in some way an unhappy knack of upsetting customers. The point at issue was whether he would be prepared to carry on under my supervision. "Yes," he replied, "so long as you don't try to drive me—I am willing to be led, but I am as stubborn as an ass if I am driven." In these few words the man, so far as his chances of management were concerned, had written his own epitaph.

To handle customers successfully one needs to have an infinity of patience and faculty for self-repression, an even temper, and an agile mind. A wrong word and the account is lost for good. Experience counts a good deal, of course, but suitability of temperament is the greatest asset to the job.

The U. P. at Wembley.

The great exhibition at Wembley gave the manufacturers of this province an unrivalled opportunity of coming into touch with customers from distant parts of the British Empire as well as with the great retail London houses. The exhibition gave a double education, to the buyer and to the seller, says a resolution of the Government of United Provinces of Agra and Oudh. Those who visited the Indian pavilion at Wembley—and their number ran into millions—were able to see and appreciate the artistic quality of the goods manufactured in such centres as Farrukhabad, Benares, Moradabad, Mirzapur and Agra. To the Indian merchant the exhibition offered important lessons in modern trade methods, in the value of advertisement, and the importance of studying the taste of the customer. The worth of such lessons is not to be estimated by their cost to the Government which provides them. The total expenditure on the United Provinces court was Rs. 2,87,700. The receipts, chiefly for rent on space and commission on sale, were Rs. 1,27,700. Government thus paid for its share of the Indian pavilion Rs. 1,60,000. In return for this expenditure business to the value of ten lakhs and a half was transacted by exhibitors in the United Provinces court. The enquiries made by potential wholesale buyers and the trade introductions will, it is hoped, lead to a large expansion of business between India and other countries both within and without the British Empire. The cost to Government is thus equivalent to expenditure on a promising scheme of fostering provincial industries. The Governor, acting with his Ministers, considers a lakh and a half not too large a price to pay for the encouragement, education, and advertisement given to the trade and industry of the United Provinces.

The experience gained by the Government's representatives and the Indian traders who visited Wembley has opened the eyes of both to the need of establishing in London a trading agency which will represent the United Provinces in Europe. The exact form which this agency should take has not yet been decided. Two alternative forms are proposed: a sale and exhibition hall owned jointly by this and other provincial Governments: secondly, an arrangement with an experienced wholesale distributing agent who would secure orders in England and on the Continent for goods of Indian manufacture. In either case the object is to continue what the exhibition began, to popularize Indian goods in Europe and to get into touch with the great retail houses of the West. The Governor, acting with his Ministers, hopes shortly to decide this important matter, which he believes is likely to stimulate local handicraft by opening up new markets.

There is no hope whatever of translating into fact the delusion that Great Britain can once more become supreme as an industrial country.—*Mr. W. A. S. Hewins.*

Indian Economic Notes.

Education in Bombay.

In the resolution on the Report of the Director of Public Instruction for the year 1922-23 the Bombay Government deplores that keen public interest taken throughout the Presidency in the development of education is not reflected in the Provisional Legislature where an opportunity for accelerating the official programme of educational expansion by increasing the limited resources of taxation, has been neglected. The outstanding feature was the enactment of the Primary Education Act whereby the complete control of primary education passes from the Education Department to the District Local Boards and Municipalities. The latter have voluntarily undertaken, in some cases, to increase taxation with a view to the provision of the necessary funds. Of the five Municipalities which have given effect to compulsory education, three are working encouragingly. The Government will shortly place before the legislature of the Legislative Council a scheme for the promotion of technical education. There was a further falling off in the number of students appearing for the B.A. Examination. This is attributed partly to the Non-Co-operation Movement and partly to the fact that the B.A. Degree does not in itself guarantee profitable employment. This gives rise to a delicate problem of how far it is in the real education interests that colleges of a moderate calibre should be encouraged to spring up in different parts of the country ?

Technical Education in Bihar.

Considerable progress has been made in Bihar and Orissa in the matter of technical education according to an official review just published. Civil engineering classes and mechanical apprentice classes have been opened at Patna, and other ventures include the starting of the Orissa School of Engineering, the construction of a technical institute at Muzaffarpur, the reorganization of the evening mining classes, the reservation of eight seats at the Calcutta Research Tannery, the award of two State technical scholarships annually, the sanctioning of stipends to enable Biharis and Oriyas to obtain training in the coal-fields and other parts of India, the opening of classes for composing, printing and book-binding at the Government Press, the establishment of apprentice classes at Dehri, the adoption of the scheme for a cottage industries institute and the opening of the Jamshedpur Technical Institute and the Jamalpur Technical School. The whole field of technical and industrial education was recently surveyed by the Vocational Education Committee. The Government are now considering its recommendations, and hope to announce their conclusions shortly. Technical education is a subject which Sind is vitally interested in at present, and must of necessity play an important part in the development of the province. It has been pointed out again and again that less academic teaching and more vocational training would greatly assist in reducing unemployment. Why not a Vocational Education Committee for Sind ?

Sugar Consumption.

How does the following *ex* the London *Confectionery Journal*, appeal to you ? "Tired as everyone is of the very word prohibition, there is no doubt that the world, as a whole, and especially Europe, America and Australasia, tends to consume less and less alcohol. This will cause, and is causing, the demands for food, etc., containing sugar, greatly to increase, firstly because former consumers or would-be consumers of intoxicants are taking sugar-containing "refreshers" instead. Also and perhaps an even more important reason has arisen from his abstention from money-consuming drinks, in that it is enabling the masses to buy more sweets, etc., and through this to bring, during 1925, the *per capita* consumption of sugar throughout the world to an unprecedented level. The greater or lesser belief in this high level of world consumption is, possibly, at the back of all sugarmen's minds, and is thus causing sugar to move up, in value in spite of those mountains of increased supplies which, only a month ago, seemed likely to snow us under."

India's Customs Revenue.

According to the returns received in the Commercial Intelligence Department, the grand total of gross Indian sea and land customs revenue (excluding salt revenue), amounted to Rs. 3,94 lakhs during the month of December 1924, as against Rs. 4,55 lakhs in the preceding month and Rs. 3,08 lakhs a year ago. The total revenue realized in the nine months, April to December, 1924, was Rs. 35,70 lakhs, as compared with Rs. 29,71 lakhs in the corresponding period of the previous year. Import duties contributed Rs. 28,49 lakhs ; export

duties, Rs. 3,97 lakhs ; excise duties on cotton manufactures, Rs. 1,66 lakhs ; on kerosene, Rs. 72 lakhs ; on motor spirit, Rs. 57 lakhs and land customs and miscellaneous, Rs. 29 lakhs. Increases were noticeable in import duties on sugar, cotton yarn and piece-goods, iron and steel and other metals, yarn and textile fabrics other than cotton and silk, liquors, mineral oils, silk, piece-goods, motor cars and cycles and cutlery and hardware ; in export duties on raw and manufactured jute and rice and in excise duties on cotton manufactures, motor spirit and kerosene. On the other hand import duties on matches, machinery and railway plant and export duty on tea showed important decreases. The protective special duties collected under the Steel Industry (Protection) Act of 1924, from June 13 to December 31, 1924, amounted to nearly Rs. 1,55 lakhs, which are included with the figures of import duty.

Return to the Gold Standard.

There are two sharply divided opinions in financial circles in England on the question of the return to the gold standard. While Mr. Churchill thinks that the restoration of the free gold market will facilitate inter-imperial and international trade Sir Alfred Mond doubts its wisdom. The *Times* thinks that it will bring far more permanent good than any possible temporary inconvenience. Writing on the subject in mail week in the *Nation*, Mr. J. M. Keynes expressed the view that the theory that a return to gold would enable British exporters to offer more competitive prices in the international market had no reasonable foundation and if Britain went back to the gold standard and if there was no rise in prices in the United States, the result would be the forcing down of wages in England. The *Nation* in a leading article forecasted the following dire results if a return to gold standard was announced :—'a curtailment of credit, further increases in bank rate, a deflation drastic enough to force prices down by a considerable percentage'. A substantial reduction in prices will certainly hit hard many interests, but will it not on the whole be in the interests of consumers ? Fall in prices will result in stimulating demand and will thus be eventually beneficial to British industries.

Duty on Artificial Silk.

An interesting point has arisen regarding the Excise duty payable on mixed goods containing artificial silk. The Madhavji Dharamsi Mills use English yarn and artificial silk in some of their goods ; as both these articles are subject to an import duty, the Mills claimed that Excise duty should not be charged on goods made therefrom. The Bombay Collector of Customs maintained that the Cotton Duties Act did not provide for the granting of any such exemption.

Excise Duty on Mixed Goods.

The Bombay Millowners' Association has now submitted a memorandum drawing attention to the orders issued by the Government of India in 1913, respecting the assessment of Excise duty on goods made partly of cotton and partly of silk or wool. These stipulate that when mixed goods contain duty-paid yarn "otherwise than in borders or ends, the Collector may at his discretion fix the value of such fabrics for taxable purposes at the total value of the finished article, less a proportion thereof represented by duty-paid yarns contained therein". Artificial silk is not mentioned in the orders, as in 1913 this substance was not used in Bombay mills ; but the Association contends that the general principle underlying the resolution is clear—namely, that the mills should not be made to pay twice over in the shape of import duty on the raw materials and Excise duty on manufactured goods. The question has come to be of considerable importance owing to the recent imposition of an import duty on cotton yarn. It is hoped that, pending a decision, Government will order a concession to be made so far as artificial silk is concerned when calculating the Excise duty payable on mixed goods.

Indian Economic Problem.

An article on India, entitled "The Economic and Social Aspirations of the Indian Nationalists," is written by an American, who points out that the Indian problem is at bottom economic, not political. Much as Great Britain has done for India, he finds that, if she is to justify her position, she has a great deal more to do.

Bombay Family Budget.

A recent issue of the Bombay *Labour Gazette* publishes the preliminary results of an enquiry which the Bombay Labour Office conducted into the family budgets of persons belonging to the upper and lower middle class in the city. The budgets of 1,748 families were examined with incomes ranging between Rs. 100 and Rs. 200. The average monthly income per family worked out at Rs. 169 and the annual per head income at Rs. 448. Out of the 1,748 budgets examined, no less than 1,200 budgets showed deficits.

Find of Moghul Coins in C. P.

The Director of Industries, C.P., in his annual report on coins during the year 1923-24, gives an interesting classification of rare coins found in the various districts of the Central Provinces. Most of the coins discovered belonged to the Moghul period and some of them were very rare and unpublished. One interesting find was the acquirement of 174 silver pieces containing punch marks of ancient India. In all 47 gold, 679 silver and 7 copper coins were acquired. After providing for the Nagpur Museum, about two-thirds of the remainder were distributed by the Curator to important museums in India and the British Museum in London.

Paper Making.

Prof. E. C. Williams of University College, London, referred to the question of paper-making in India. The paper-making industry badly needed chemical engineers ; the present output was not only low but deficient in quality. Quite apart from the question of manufacturing paper from what he might call "grown" raw materials, such as bamboos and the various grasses that were so prolific in many parts of the country, there appeared to be an immense scope for the installation of small pulp-making plants throughout the forest areas with the idea of utilizing forest refuse. This was another branch of chemical engineering of which he had had practical experience, and if he might pass a hint to the authorities most interested in the subject, would say : "Get your minds away from paper and investigate the possibilities of making cardboard from forest refuse."

Electric Power at Kolar.

For more than twenty years the mines at Kolar have had the advantage of cheap electrical power, transmitted from the Cauvery Falls, a distance of 91½ miles, and supplied by the Mysore Government. The installation has been well described as a "monumental tribute to the skill and foresight of its originators". It was a bold scheme, undertaken by the Government for the benefit of the mining industry, from which substantial revenue has always been derived by the State in the form of royalties. The expenditure involved was a heavy one, extensive operations having to be undertaken upon the Cauvery River, such as building a dam, cutting channels, installing turbines and erecting a power station. Since its original installation the application of electricity has been greatly extended on the goldfield, and to-day it is used for driving air-compressors, pumps, winders, ventilating fans, etc., as well as for operating the reduction plant and countless other purposes. The mining companies have between them formed a concern, known as the Kolar Mines Power Station, Limited, which supplies them with intermittent power, mainly for hoisting and lighting, at very low rates.

An Active Industry.

"It is unusual in these days for an industry to show such rapid expansion that its output is doubled in the course of twelve months, but according to *The Motor Ship*, it will be found at the end of the year that the tonnage of motor vessels built during 1924 is almost exactly twice the corresponding figure for 1923. A culminating point has now been reached in the application of oil engines to ship propulsion, by its adoption on big liners. Last month, two motor passenger vessels, one of 14,000 tons and the other of 9,450 tons gross, were completed, a third of 17,000 tons was launched, whilst in the course of a few days an oil-engined passenger liner of 18,500 tons gross will commence her trials in the Clyde."

Politics and Economics.

The following passage from a recent number of the *Times Trade and Engineering Supplement* deserves to be transcribed prominently in the columns of an Indian paper :— Whether the politicians like it or not the fact remains that modern politics become more and more a matter of economics. Consequently it is not unusual for many to embark on the perilous course of explaining economic questions that they do not understand to electors of whom the great majority know even less. What few people realize is that only those who know a subject very thoroughly can ever explain it in simple terms. A lucid explanation of a technical question expressed in language that the ordinary man can follow is one of the most difficult tasks that can be undertaken. Unless the subject is perfectly familiar an attempt at simplification usually leads straight to inaccuracy and the final revelation that the speaker or writer does not himself know what he is talking about.

The Late Sir William Acworth.

A London correspondent writes :—The death of Sir William Acworth, a few days after a seizure when he was about to deliver a lecture, will be widely felt, for he was well-known and liked in many countries and more than one continent. His fame as an expert in railway

administration and finance was widespread. For many years he lectured on railway economics at the London School of Economics. It was there that he constantly found the embarrassment of the absence of suitable text-books, and he therefore wrote an admirable little volume on 'The Elements of Railway Economics', which saw the light 20 years ago. It was to be followed by a *magnum opus*, but pre-occupation with many other duties prevented this task being accomplished. This year, however, saw a new and somewhat enlarged edition of the above-mentioned work.

Cawnpore Sugar Factories.

According to Willett and Gray's calculations, the indicated consumption of sugar in the United States during the first half of 1924 amounted to 2,684,972 long tons, as compared with 2,593,691 tons for the corresponding months of 1923, and 2,671,953 tons for 1922. Thus, although business conditions generally throughout the country have not been good, yet the consumption for the half-year has proved the largest on record. Consumption has increased appreciably in other parts of the world ; and to this reason the fact may be attributed that the Cawnpore sugar factories, under the managing agency of Messrs. Begg, Sutherland and Company, have done well during the past half-year in spite of adverse influences of various kinds. The British Government, after a long time, has at length decided to support the home beet sugar industry ; and this in a sense is a contending factor ; but there is really no question of home beet superseding overseas cane as the main source of Britain's sugar supplies, any more than American beet has succeeded in replacing cane in the five million ton consumption of the States. There is nothing in view, therefore, that is likely to clog the profit-earning capacity of the Cawnpore works.

Education in Hyderabad State.

The annual report of the Education Department of Hyderabad State reveals a very satisfactory condition of things in the educational world. In the five years prior to the year under report no less than 3,033 new schools were opened with an increase of 141,214 scholars. The percentage of pupils undergoing instruction is 17 per cent of the school-going age, and for every ten miles in area in the Dominions there is a school. The total expenditure on education during the year under report was Rs. 70,18,072, more than Rs. 2,50,000 in excess of the previous year. There are at present four colleges in the Dominions with 706 scholars. The cost of collegiate education was Rs. 4,05,413, which is 5.8 per cent of the total educational budget. There are 31 high schools, with 11,678 pupils, and 104 middle schools with 24,279 pupils. Special schools under which denomination are normal schools, engineering schools, technical institutes, professional training schools and religious classes number 34, with 2,974 scholars. As regards female education there are at present 739 institutions with 35,433 girls, showing an increase of 1,848 pupils. The expenditure on female education is Rs. 6,70,286. The Government award four kinds of scholarships (Special, European, Asiatic and Miscellaneous), and the expenditure during the year on this account was Rs. 5,62,526. Grants-in-aid amounting to Rs. 3,77,477 were given to 649 institutions and Rs. 53,932 was spent on the upkeep of libraries.

Education in the Punjab.

The report on the progress of education in the Punjab for the year 1923-24 gives some interesting details regarding the education of girls. The total number of girls in all types of institutions was 96,000, an increase of 2,200 over the figure of the previous year. This shows that at present one in a hundred of the female population of the Province is literate. The education of girls is thus progressing less satisfactorily than that of boys. Owing to the prevalence of plague a large number of girls' schools had to be closed and this had an unfavourable effect on girls' education. The total number of girls' schools decreased from 1,153 to 1,129 during the year. The Department is endeavouring to open a primary school for girls in every large village, and it is hoped that very soon the number of girls' schools will increase, at least as rapidly as that of boys' schools has been doing for some time. In Lahore and Amritsar districts over 5,000 girls are attending schools. Sialkot comes next, while Jullundur, Ferozepore and Jhang have each over 3,000 girls in schools. Of the total number of girls, 126 were at College and 2,448 in High Schools. There were two Colleges and three High Schools maintained by Government while there were two Colleges and 13 High Schools receiving grants-in-aid from Government. An important feature of girls' education during the year was the reorganization of secondary schools providing facilities for the training of student teachers.

Foreign Economic Notes.

Railway Centenary Celebrations.

Important railway centenary celebrations are being arranged to take place in England next July, in which George Stephenson's original passenger engine, "Locomotive No. 1," will run once more over its old Durham route from Stockton to Darlington, pulling rolling stock of 100 years ago with its driver and fireman wearing the "top" hat of that period. The actual centenary falls on September 27, but owing to the holding of the International Railway Congress during the last week of June, the centenary celebrations will be held in the first week of July to enable delegates from all over the world to take part. The celebrations, commencing at Stockton on July 2, will include the unveiling of a tablet where the first railway ticket was sold, a pageant of old and modern rolling stock; and, at Darlington on July 3, a banquet and the exhibition of railway relics. It is hoped that 100 survivors of those who worked on the Stockton and Darlington line between 1825 and 1869 will be present.

Cement Materials from Sea Bed.

The first unit of the plant being built by the Pacific Portland Cement Company at Redwood City, California, will be equipped for a daily capacity of 2,500 barrels, but the comprehensive plans worked out provide ultimately for a plant of 10,000 barrels capacity. The site is on the shore line of the bay, 25 miles south of San Francisco. Concrete is used in the construction of all the buildings and 85 ft. piles were driven to provide the timber pile foundations. The unusual feature about this cement-manufacturing project is that all the required raw material, except the necessary small proportion of gypsum, will be recovered from the bottom of the bay by a suction dredge. The material consists of a vast bed of oyster shells, and possibly shells of other kinds, the interstices between the shells being filled with a silt-like clay that was originally deposited there by water. The deposit of this material is of considerably depth and covers the southern arm of San Francisco Bay. The relative proportions of shells and clay vary considerably, but in general the two are nearly equal in bulk. The deposit is compact and hard, but it can be readily taken up by a suction pipe equipped with a rotary cutter. The one suction dredge required for the first unit of the plant will be equipped with a 16 in. centrifugal pump, driven by a six-cylinder semi-Diesel engine, giving the pump sufficient capacity to take up material at the rate of 200 cubic yards per hour and discharge it into a 600-ton barge. A second Diesel engine is being installed in the dredge boat for operating the hoist and the cutter. Dredging operations will be conducted about six miles from the shore, and the loaded barges will be towed that distance to the plant and unloaded by a locomotive crane and a clam-shell bucket.

Artificial Petroleum.

The French industrial world is much interested in the progress of the manufacture of artificial petroleum. Professor Mailke's experiments at Buc showed that a stationary motor ran perfectly with synthetic petroleum made from a basis of water gas. Later, the first motor car that arrived at Buc was stopped, its petroleum taken out and the new fuel put in, and the car re-started. It ran with perfect ease. The only raw material required is lignite coal, which is a valueless waste product, while peat and sawdust can also be utilized. It is estimated that it will be possible to manufacture oil at a cost of 75 centimes per litre, compared with one franc 75 centimes, which is the cost of a litre of motor spirit. The plant required is simple, being merely a boiler which is capable of being heated to 400 degrees.

Immigration.

Thus the *European Commercial* says:—It would certainly appear that any country has the right to prohibit any large influx of foreigners if it considers that its interests are best served by doing so, and this is a matter which must be left to the individual discretion of the nation concerned. In Great Britain, for example, the Act of Parliament restricting the entry of aliens into the country has just been prolonged, and the reasons for this step were very clearly stated by the Home Secretary recently. He was not prepared, he said, when there were something like 1,200,000 unemployed in the country, to allow an alien under any circumstances to come into the country to seek work. It cannot be argued that international trade is in any way impeded by this restriction. The *bona fide* business man, whatever his nationality, is at liberty to go to England for *bona fide* business purposes at any time and there is no restriction whatever on the entry and movements of tourists and travellers. But the Government considers that an increase in the number of resident

aliens is not desirable, and this decision is certainly not a matter for discussion by the League of Nations. The position in the United States is in the main similar. Immigration has not been stopped, but limits have been placed on it, while from Japan it has been prohibited entirely. This simply means that the country does not desire further immigrants from Japan. Such an attitude may be regarded as wise or foolish according to individual inclinations, but it is a decision by the citizens of a country concerning their own country and as such it should not be questioned. In this case again trade is not restricted, since business men and travellers from any country, Japan included, do not come within the scope of the United States immigration regulations. In France, on the other hand, foreign labour is needed and to exclude it would not be for the benefit of the country. In the Argentine, too, and in other parts of South America, colonists are required and it is for the good of the various countries that they are admitted.

World's Consumption of Cotton.

According to the figures issued by the International Federation the world consumption of cotton during the 1924 season amounted to 10,955,000 bales as compared with 12,666,000 bales in the 1923 season. The latest estimates of the new crop is 12,500,000 bales, with a carry-over of 2,300,000 bales, estimated. If the consumption remains the same as last year, there will be a surplus in July, 1925, of 3,000,000 bales. It is possible that Lancashire and the United States of America may both increase their consumption by 500,000 bales, and in that case there will remain a carry-over of 2,800,000 bales to lend stability to the market. While this is satisfactory, it is not an indication of the coming of cheap cotton. Cotton at the pre-war figure of 6d. per pound is out of the question. The generally accepted opinion is that consumers must be reconciled to trusting, in future, to a 14*d.* cotton where they formerly put their trust in a 6*d.* one. They will have to be prepared to agree to the enhanced price of the cloth amongst other things.

Labour in Soviet Russia.

The question of the productivity of labour has latterly become of supreme importance, for Russian national economy and the Soviet press is now devoting considerable space to the discussion of this subject. If hitherto no remedial measures have been taken by the authorities in this connection, and if little attention has been given to this problem, the reason may be said to lie in the general economic depression of the Soviet Union. During the period of Communism (1917-1920), the complete disorganization of economic life, the great fall in wages, the state of famine in the industrial centres and the general political outlook, all contributed to diminish the productivity of labour which, in 1920, fell to 29 per cent of the figure for 1913, and to 25 per cent of that for 1916 (the year preceding the revolution). As a result of a recent enquiry published in September 1924, a Commission appointed by the Soviet Supreme Economic Council came to the conclusion that the productivity of labour in industry as a whole was only about 50% of the average pre-war figure. The Soviet press explains this situation by : (a) a low individual output of the worker ; (b) the absence of discipline in the industrial undertakings ; (c) the bad condition of the machinery and other equipment of the undertakings. As the necessary repairs cannot be executed at present by the State nationalized industry, because of financial difficulties, the whole attention of the competent authorities is directed towards an increase of the individual output of the worker.

Fire Insurance Companies.

According to the *Economist*, the world-wide operations of the British Fire Insurance offices worked more satisfactorily last year than in 1922. This was principally due to the improvement in the conditions in the United States, from which many of the larger companies derive the bulk of their premium incomes. That home business also contributed is shown from the results of two companies which withdrew from America several years ago. There was a heavy loss in the Victoria Docks, London, at a tobacco fire which is computed to have cost £1,000,000 but the risks were well spread. The event of the year was, of course, the tremendous devastation of Tokio and Yokohama by an earthquake fire, which almost swept these two great cities off the map. The British and American fire offices which had interests in Japan, directly and indirectly by re-insurance, were protected by the earthquake fire clauses in their contracts. Some losses were incurred on special risks at rates covering the earthquake hazard, but generally the earthquake-fire losses did not involve liability to pay. Nevertheless, as an act of grace, the British and American companies decided last June to return a full year's premium under all policies affected by the disaster.

Something New in Tramcars.

The London United Tramway Company have

decided to instal a new type of tramcar on their Hanwell and Brantford route. The new tramcar is entirely controlled by one man, who performs the dual role of driver and conductor. In order to simplify and expedite the work of the driver-conductor, the car has been equipped with ingenious mechanical devices, many of which are automatic. Doors are operated pneumatically and work in unison with the steps. They are automatically prevented from opening while the car is in motion by means of a special valve. When the car is at a standstill, the exit door will not open unless a passenger is waiting on the rear platform ready to alight because the door is fitted with valves controlled by a treadplate, on which a passenger must be standing in order to open the door. A further interesting "Safety-First" device is the "dead-man grip" with which the air-brake handle is fitted. If the driver takes his hand off this,the brakes are automatically applied and the power shut off. The new car seats 30 passengers, and fares are paid as they enter. The coin is dropped into a farebox, and the driver issues the ticket, which is cancelled by a foot-operated punch. A change-giving machine further expedites the issue of tickets. In 1922, the Company designed and constructed a one-man car which has now been in service on the Boston-road to Hanwell route for some time past. The experiments made have proved entirely satisfactory, and the car has left to scheduled time, although working in with double-deck tramcars on the same route. It is proposed to withdraw the two-man cars now employed on this particular route and operate it with the "one-man" type only. We wonder what Karachi's tramcar critics will say *now!*

Thrifty English People.

Scotsmen are always credited with being thrifty—if not mean—but recent statistics regarding the saving capacity of the people of England and Wales show that the Southerners are not less thrifty than their Scotch cousins. There are over 10,000,000 depositors in England and Wales, with an average credit of £22 18s. In Scotland there are 560,000 accounts, with an average deposit of £16 19s. 3d. The total amount of savings in the Post Office Savings Bank in the United Kingdom is over £268,000,000. In addition to this there are £260,000,000 in Government securities standing in the Post Office Savings Bank to the credit of holders. If we add the £84,000,000 of assets of the building societies and the £85,000,000 share capital of the industrial and provident societies, some idea of the extent of the peoples of England and Wales can be arrived at.

Inferior Tea in India.

It has been brought to the notice of the Punjab Government that an appreciable quantity of tea imported into India is of a very inferior quality, that much of it is really unfit for human consumption and that suitable measures should be taken to check and control the importation of such tea. In the United States, Canada and Australia customs regulations prescribe the standards with which imported tea must comply, teas are analysed before they leave the customs and if they do not comply with the prescribed standard they are not admitted. It has been suggested that following the example of these countries, (1) standards prescribing purity for tea should be fixed, (2) Customs officers should be empowered to require all imported tea to be analysed, and (3) such teas as comply with the standard should be admitted freely and those which on analysis fail to comply with the standards should be rejected. In this connection the effect which such restrictions would produce on the price of the commodity will require consideration, and the Punjab Government before taking up the question, desire to ascertain the views of the consumer in the matter. Persons or associations interested may forward their views to the Secretary to the Government of the Punjab, Transferred Departments, on or before the 1st October, 1924.

The Co-operative Movement in Russia.

A reduction in the number of co-operative organizations; a decrease in the number of members; a considerable weakening of the finances of the co-operative movement; an abnormal development of the administrative system; such are, in the opinion of Mr. Prokopowitch, ex-President of the Central Committee of the Congress of Russian Co-operative Unions, Professor of the Russian Universities of Berlin and Prague, the features of the present position of the co-operative movement in Soviet Russia. The history of the Russian co-operative movement under the Soviet regime may be divided into three periods. During the first of these—from the end of 1917 to the beginning of 1919—the co-operative system continued to exist as an independent organization. It was, nevertheless, hampered by the general policy of the Government which changed the economic system of the country from top to bottom. During the second period the movement was deprived of its independence and became a state institution. All the

forms of co-operation are comprised within the "communities of consumers" which are State organs for the food supply of the population. In the third period, beginning in the spring of 1921 with the introduction of the new economic policy, co-operative autonomy was gradually restored although its economic revival proceeded but slowly, owing to the fact that the heritage of the previous policy weighed too heavily upon it. At the beginning of 1918 the membership of co-operative organizations in Soviet Russia reached the very high figure of 21,200,000, 10,000,000 of whom belonged to consumers' co-operative societies, and 10,500,000 to co-operative credit societies. Credit co-operation completely disappeared during the years 1919-1921 and its restoration is very slow. The number of consumers' societies has diminished by one-third, and their membership by four-fifths. On the other hand, the number of agricultural associations is much higher, although their membership is lower, *i.e.*, about 80 members per association; and their total turnover is very small. The only type of co-operation which had progressed is that of industrial production, which at present occupies a special position in the movement, owing to the ruin of large-scale industry and the disorganization of the markets.

New Cure for Consumption.

We live in an age of "cures", and the latest disease said to have been successfully combatted by a new method is consumption. The new product is called sanocrysin, a gold solution invented by Professor Mellgaard, the well-known physiologist. The professor recently stated that sanocrysin originated, like other gold treatments, from the discovery made by Koch, the famous German scientist, and that salts of gold poisoned tubercle bacilli. It is claimed, however, that sanocrysin is the only gold treatment yet found that has actually killed tubercle bacilli in the human body. It is an inorganic compound which contains gold, but does not act as a metallic salt thus preventing metal poisoning of the human tissue even if large doses are administered. Sanocrysin can be injected into the patient's veins or muscles, and remains active from four to six days after injection. When the tubercle bacilli begin to decompose, they release poisonous substances which penetrate the human tissues. It follows, therefore, that even if they are killed the patient may die from the effect of these poisons. In order to prevent this danger, the injections of sanocrysin are accompanied by the injection of a serum designed to avert the effect of the dead tubercle poisons. This is the chief feature of the new treatment. The cure consists as a rule of six or seven injections of the gold solution and the same number of the serum. The approximate cost of the treatment is about £5 for each case. Dr. Secker, head of the Bispebjerg Hospital, states that sanocrysin is of value in early cases, many of which have been cured in a short while. Even old chronic cases that have resisted all other treatment have shown satisfactory results provided a sufficient quantity of healthy tissue was still functioning and the patients were not too exhausted to react to the method of cure. Many cases of severe or acute tuberculosis which would in the ordinary course of events have proved fatal, have shown improvement under the new treatment. Consumption is very prevalent in many parts of India, and the new cure will come as a blessing to thousands of unhappy lives in this country.

A New Kind of Railway.

There is at present a railway in course of construction in London that possesses many original and novel features. It will carry no passengers, and will be the first railway in the world used for commercial services that will be operated without driver or attendants on the trains. This is the Post Office Tube Railway, which is being built to convey mail matter between the principal railway stations and district parcel offices. The line extends between Paddington and White Chapel, a distance of about 6½ miles, and runs in a tunnel 9 feet diameter at a depth of 30 to 80 feet below the surface. The trains, which will be electrically driven, will be operated from control cabins at the different stations along the line, the system being similar to the power operated point and signal method in use on certain railways, but in this case applied to the operation of the train itself. Although the human element is almost entirely eliminated except for loading and unloading the trucks, a very complete ventilating system is being installed by Davidson & Co., of Belfast, in order to avoid the accumulation of bad air which would pass up into the Post Offices in communication with the tube. Twenty-five electrically operated "Sirocco" fans and some miles of trunking are being installed to distribute the large volume of air required throughout the tube.

British Trade and Finance.

Russia and Japan.

London, 1*st April* 1925.—The Tokyo correspondent of the *Indian Daily Mail* had an interview with Viscount Goto, a leading Japanese statesman, in which the latter discussed the problem of Russio-Japanese friendship. Viscount Goto may rightly be regarded as the pioneer in the effort to bring Communistic Russia and Imperial Japan together. He was the mainspring of the machinery that enabled Comrade Kara-Khad, Soviet Envoy to Peking, and Mr. Yoshizawa, Japanese Minister in Peking, to sign the agreement that restored Russio-Japanese relations to the pre-revolution basis. Viscount Goto, when Mayor of Tokyo, first invited Comrade Adolf Joffe here, in the teeth of powerful popular opposition. He launched informal and unofficial conversations looking to the resumption of normal relations between Japan and Russia and ending the veiled hostility between the two countries after the Bolshevik revolution.

"I have long held the view", he told our correspondent "that the preservation of intimate relations between Japan and Russia would conduce not merely to the advantage of the two countries concerned, but would also turn out to be a guarantee for world peace."

Our correspondent asked Viscount Goto from which direction he expected trouble to come.

"That is a very hard question to answer," was the reply, "but I have an idea that the great world-struggle of the future will have its origin in the war for rivalry between European, Asiatic and American nations. Proper co-operation between Russia and Japan would be very important in case such a struggle took place."

Answering a question as to what would occasion such a fearful resort to force, Viscount Goto said laconically :—

"The markets of Asia, more particularly those of China, and the hegemony of the Pacific, I foresee a change in the policy of Great Britain and America towards Asia and that Japan and Russia have joined hands. The relations between America, Japan, Russia and China will become more and more complicated, more and more delicate, as time goes on, and there is every need for us all to be very prudent and circumspect."

When asked whether Japan, the last stronghold to-day of the Divine Right of Kings, was not playing with fire by thus drawing close to the Soviet where kings and aristocrats were anathema, Viscount Goto parried the question by saying that this would be an admirable test of the stamina of the Japanese people.

"I do not think Bolshevism or Communism will gain any worth-while foothold here," he said. "It is an insult to the Japanese intelligence to imagine that it will fall an easy prey to Moscow propaganda. The character of the Japanese people has been moulded by the united efforts of the Government and the people since the accession of the Emperor Merji, and it has increased in soundness and grown more amenable than ever to the guidance of those in authority."

Proceeding, Viscount Goto said that, with the signing of the Russio-Japanese treaty, a new era in diplomacy had been reached and a new era in the development of Japan.

"Japan's internal conditions were fast assuming a form that could not be regarded except with apprehension", he said. "We have no place to send our surplus population to. Rich and uninhabited areas in Australia, New Zealand, America and Canada have been shut to us. Wherever we look is a metaphorical sign board to the effect that we Japanese had better keep-out and stay-out. The nation has been in a state of chronic starvation. We cannot industrialize the country sufficiently owing to the shortage of raw materials. Now, there is room for our surplus population in Siberia while we also have easy means, whereby we can secure raw materials." The resumption of relations with Russia is the first ray of promise on a rather drab horizon that surrounded Japan hitherto. Viewed in this light, whatever concessions or compromises Japan may have made hardly matter, for the ultimate advantages of a close alliance with Russia will easily outweigh all such minor drawbacks.

Production of Cheap Yarn.

Experiments are being made in Lancashire to see whether by the use of low-grade Indian cotton cloth can be produced at a price which will enable manufacturers to compete successfully with similar material turned out from Japanese mills. English cotton goods of standard qualities have a very high reputation but they have become too dear to be bought by millions of people, and spinners who have given careful consideration to the situation have come to the conclusion that a section of

the Lancashire mills will have to provide cloth which the East can afford to buy.

Mr. S. S. Hammersley, Unionist member of Parliament for Stockport, who is interesting himself in the matter, takes the view that the Rovton section of the trade must turn its mind in the direction of producing a very cheap yarn from Indian-grown cotton, and that the co-operation of the weaver, bleacher and finisher must be obtained. India at present produces 5,000,000 bales of cotton a year, or a quarter of the world's supply. Much of it is of short staple, and is inferior to the American cotton, which the Lancashire spinners prefer. Japan and Italy take large quantities of it, however, and use the raw material to undersell Lancashire in India, Java and South America. Mr. Hammersley links with his proposal that English spinners should use more of the available Indian cotton a further suggestion that attention should be given to the question of future production, so that new areas which will shortly become available by the completion of irrigation schemes, may be planted with the American type of seed, which would make the cotton grown available for the general Lancashire trade.

To a representative of *The Times*, Mr. Hammersley said there were several points to be considered. One was the objection of the operatives to spinning coarse-grade material. When potential customers were taking their competitors' stuff because it was cheaper however, it was necessary that some mills should produce cheap material. They could spin Indian cotton up to 32's and he was making arrangement, in conjunction with the bleachers for a cheaper bleach than they had previously used, and also for a cheap finish. The cloth, he hoped, would go to India to compete on a favourable basis with Japanese goods. Another matter was that there was a tendency to stabilize the Lancashire working week at a maximum of 35 hours. This compared with three-shift working in Italy and two shifts of 11 hours each in Japan. In spite of this, a Stockport manufacturer was producing cloth from Indian cotton which he was selling in connection with Italian cloth in the Argentine.

Speaking of the possibility of India growing a higher grade of cotton, Mr. Hammersley said that India originally produced some of the finest grades known. The general production had depreciated very much in character and in staple and the problem had been complicated by the unbusinesslike attitude of growers, ginners and pressers, who had taken an inferior growth from one district and mixed it with a better growth in order to get more money. The bad effect of this had been recognized, and the Indian Government last year passed an Act to prevent the transfer of cotton from one district to another except under licence. This would have a beneficial effect on quality and uniformity but there still remained a need for adequate regulation of cotton-ginning and cotton-pressing factories. Legislation for this purpose had been introduced in the Legislative Assembly, and was referred last month to a Select Committee. He was afraid that the Indian growers would not plant better stuff unless Lancashire gave them encouragement. Lancashire last year, because of the high price of American cotton, did take a proportion of the Indian crop, but this year the spinners were taking less with American at 1*s.* to 1.1*d.* a lb. Next year there was the possibility that Indian cotton would not be available. The point he wished to make was that the new districts to be opened up should be given the right type of seed. The seed should be given to the growers. The Indian Central Cotton Committee was doing good service, but the British Cotton Growing Association was not paying sufficient attention to Indian in relation to other fields in which cotton was grown. Cotton cultivation up to now in India had depended on the rainfall, and short staple cotton was grown to a large extent because it matured quickly and was not so susceptible to insect pests. With irrigation it would be possible to grow the American type, but it was important that a right beginning should be made, and he trusted that full consideration would be given to the matter by those who were concerned in the prosperity of the Lancashire industry.

Making the Most of Life.

All adults may be divided into three classes. First, those who are very keen on the work by which they earn their living, who run to this work as the bridegroom to the bride, and leave it with even more reluctance than the bridegroom leaves the bride, writes Mr. Arnold Bennett, the well-known novelist, in the *Sunday Pictorial*. Second, those who are not keen on their work, starting it with reluctance and quitting it with a sigh of relief. Third, those who do not have to work regularly for a living—a large class.

The first class, concentrating on their master-passion, detest spare time and become narrow through over-concentration. The second class have usually plenty to spare time,

but usually fritter it away as spendthrifts fritter away money. The third class are often the busiest and the most rushed of the three, and find it the most difficult to organize—simply because they have had no discipline.

But all three classes are alike in the excellent desire to live more calmly and more fully. And all three classes should treat themselves in the same way, for all three will cry out with the same voice : 'I have no time for widening my life. I cannot make time.'

Well, of course, we cannot any of us make time. Time is a fixed quantity.

There is, however, more time at our disposal than we generally suppose. A man, for instance, will assert with sincerity that he would like to read, but has no time to read. Yet if that man happens on a long book that enthralls him he will somehow discover time to read it in the spare time of half a week ! Proof enough that he had been under-estimating his spare time !

The problem is, not to make time, but to arrange time. Bad time-habits must be broken. They can only be broken by ruthless methods, for it is far easier to break a good habit than a bad one. The members of the first class must ruthlessly limit the exactions of their master passion—a difficult undertaking, but they have the immense advantage of self-discipline already acquired.

The spare time of the second class is encumbered with a litter of disconnected trifles which must be ruthlessly swept up to make a clear space for some regular activity. They have some self-discipline to help them.

The whole life of the third class is a horrid mess of time-extravagance and waste. They have rich resources of time, but lack the self-discipline to utilize those resources.

The greatest danger of all three classes is—to wait. We all say : 'When I have drawn level, when I have put everything into order, then I will make a start.' Ridiculous, because not ruthless !

Chop, uproot, sweep away—something, anything, no matter what, at once ; but make a space ! Something must go, something must suffer ; in every life there is, as a rule, only one thing that is important ; and of the others it doesn't matter much which is ruthlessly sentenced to the rubbish heap.

A maxim in ruthlessness. Let us not be too ambitious in clearing a space. We are apt to say sadly : 'Ah ! Unless I could get two clear hours every day I could do nothing.' Not so. With a little space here and a little space there, one can do a lot. Also, cross out the phrase 'every day,' and insert 'every week'.

Seven hours a week is the equivalent of one hour a day, and is easier to manage. The hazards of dailiness may ruin any given day, and if the self-imposed rule has been 'every day,' one is thereby morally damaged. But a week affords opportunity for recovery without shame.

And now you complain : 'But he has not said a word about employing the time which we are to arrange for ! ' Of course I have not. Everybody has private ambitions towards a wider and fuller life. And no two ambitions are quite alike.

Some want to acquire knowledge, some wisdom, some skill, some improved health. Each must search his own mind. The choice is vast. Some things are better than others ; but none is bad.

Value of Research Work.

What Sir Ronald Ross has to say about work for human health commands attentive study. The power of the methods of modern science in the hands of an investigator of genius he has himself shown us by an historic discovery, says the *Daily Telegraph*.

Thirty years ago an officer in the Indian Medical Service, called Major Ronald Ross, proved that the parasites which cause malaria are nurtured and planted in men by the anopheles mosquito. From that time the medical man and the engineer have known how to combat and prevent the disease.

To drain or otherwise destroy the breeding places of the mosquito is to make an end of malaria in that region. Towns well administered in malarial countries have reduced their annual number of cases from hundreds and thousands to a bare score.

Yet, Sir Ronald Ross tells us, malaria destroys on an average two million lives a year, and over one million in India alone. The task of eliminating mosquito pools over areas almost continental is, of course, enormous. But we must support Sir Ronald's contention that the Governments of the Empire should set themselves more earnestly to the prevention of disease.

Preventive work, because it has not the conspicuous, instant beneficent effect of the cure of patients, is little considered by the public. Research, without which there can be no general amelioration of health, no general diminution of suffering, is even less regarded because from moment to mement no precise definite results can be produced.

Sir Ronald Ross pointed out that upon the researches which are now being made 'in regard to the prevention of cancer, scarlet fever, and small-pox, the total spent amounts to the meagre sum of one penny yearly per head of the population.' We believe that there would be general and hearty support for a policy of, according to research work upon the most disastrous diseases, such endowment as the responsible leaders of science considered necessary.

The profit on such expenditure would be manifold and immeasurable. The bare economic value of the knowledge which would give us the power of preventing any disease which lays many people aside is beyond the calculations of the Treasury. With what figures shall we express the value to mankind of such a diminution in suffering and bereavement as would come from the conquest of one of the prevalent dangerous diseases ?

The Work of the Imperial Institute.

In the discussion on the Financial Resolution in connection with the Imperial Institute Bill which took place in the House of Commons on 30th March, it was stated by a member that little appeared to have been heard of the actual work of the Institute. In this connection attention may be drawn to the principal publication of the Institute, *viz.*, its quarterly Bulletin, which has now reached its twenty-third year of issue. Each number of this quarterly contains results of investigations conducted in the laboratories of the Institute, articles and notes on the production and utilization of Colonial and other raw materials, a summary of recent progress in agriculture and the development of natural resources, and notices of recent books dealing with such subjects.

In the number of the Bulletin just issued (Vol. XXIII, No. 1), a new feature has been introduced consisting of a classified bibliography relating to Colonial development and resources. This section should prove of great value to workers overseas by drawing their attention to the most recent information contained in publications from all parts of the world. The investigations at the Institute recorded in the current issue include the examination of the berries of a South African tree which yield an oil shown to be suitable for soap-making ; the determination of the properties of Balsa wood from British Honduras and Monkey Apple timber from Sierra Leone and a study of their possible uses ; and an investigation of certain British Honduras woods as paper-making materials.

A third instalment of an article on the possibilities of cement manufacture in the Crown Colonies and Protectorates contains incidentally the results of examination at the Institute of various cement-making materials from Trinidad, the Bahamas, British Honduras and Fiji. An article giving an account of the henequon or Memican Sisal Hemp Industry of Yucatan should prove of interest to painters in Kenya, Tanganyika and other parts of the British Empire where the production of sisal hemp is of increasing importance.

The Ideal Home Exhibition.

The ninth *Daily Mail* Ideal Home Exhibition, which was recently opened at Olympia by Princess Marie Louise, promises to be an even greater attraction than any of the previous exhibitions of the series. There are people who, as a general rule, avoid exhibitions, but most of them make a point of seeing the Ideal Home Exhibition, and this inconsistency is easily understandable, for the *Daily Mail* undertaking is a superlative attraction, teeming with interest and new ideas. One can go from end to end of it without being wearied by an endless series of stands, for all the way it is novelty, and the purpose of the Exhibition itself is sufficient to make it a never-ending attraction, for everyone wishes to see the things that go to make an ideal home, even if at the moment a home of any kind that an Englishman can call his own is out of the question for very many people.

First among the features of the Exhibition must be put the steel houses—the hope of so many thousands as a solution of the housing difficulty—and probably the crowds who go to Olympia will make them their immediate Mecca. The houses are arranged in an admirable setting. Through the side hall ripples a little river spanned by three charming bridges, and beyond the village green are the houses, calling forth ideas of life in the most pleasant surroundings. Hard by is the Queen's Dolls' House, placed in a structure designed by Sir Edwin Lutyens. In the central hall are several rows of the adjuncts that go towards a perfect domestic existence, and here the housewife can well pass many enthralling hours. Beyond this hall is the supreme triumph of the Exhibition—the series of glorious gardens calculated to entrance everyone who has anything of the gardener in him, and to make even those pause who do not care for these things, if such there be. It is a veritable horticultural paradise, a place for the dreamer, where most pleasant imaginings can be conjured up.

The World's Agriculture.

The Increase in the World's Yield of Sugar.

Rome, 31*st March*, 1925.—The International Institute of Agriculture publishes in the March number of its "International Crop Report and Agricultural Statistics" an important survey on the progress of the world's sugar production. From this survey it is seen that the sugar-beet crop of last year was decidedly larger than that of 1923 in all the producing countries. This resulted from a general increase in the area sown, and from the course of the season, which was on the whole favourable for this crop. The sugar content of the beets in the more important regions was also higher in 1924 than in 1923. Consequently there was a considerable increase in the world's yield of beet-sugar. It may be expected that this yield will approach 175 million centals, as compared with 130 millions in 1923-24.

Although the official data of cane-sugar are still very incomplete, there is reason to believe that the yield will not be below that of the preceding season, and may even be slightly above it. While the Indian forecast is for a decrease of 18 million centals, resulting from a decline in the area under sugarcane and from unfavourable weather conditions, there is compensation in the expectation that Cuba has a production surpassing the high yield of 1923-24. The reports are also good from Brazil, Porto Rico, Java, the Philippines, Mauritius and Australia, while those of other countries do not show much alteration. On the basis of available data, it may now be estimated that the aggregate production of cane-sugar will be about 320 million centals.

By adding in the approximate amount of 175 million centals of beet-sugar produced in Europe and North America, the total supply of sugar available during the current season attains about 495 million centals, or about 10% more than in 1923-24.

The sugar-beet industry experienced a severe shock in the war time. In the first post-war season (1919-20) the production in Germany was apparently reduced to below one-third of the pre-war quantity; that of France was only one-quarter, that of Poland one-fifth, that of Czechoslovakia less than half; and that of Russia was only an insignificant quantity. In the minor sugar-poducing countries, taken in the aggregate, the quantity of beet-sugar produced in 1919-20 amounted to slightly more than one-half of the pre-war figure. The decline in the world's yield was actually 60%.

The cane-sugar industry, on the contrary, experiencing the increased European demand of the war years, was greatly encouraged, and hot countries extended areas under cultivation, combining improvements in methods of manufacture. In 1919-20 the production of Cuba was about double the pre-war figure, while Argentina, Brazil, Peru, Porto Rico, Formosa, and Java, all reported important additions. The aggregate world yield of cane-sugar was more than 30% over that of pre-war years.

Latterly, and especially in the current season, the cultivation of sugar-beet and the resulting sugar production have gone on increasing and now approach more or less nearly to the pre-war figures. As a matter of fact in 1924-25 France had succeeded in producing more than 90% of the pre-war quantity, Poland more than 75%, Czechoslovakia more than 110%, Germany 70%. Even Russia has participated to some extent in the general recovery, and in 1924-25 attained 32% of her pre-war yield. Belgium and Italy did not decrease their production so much as some other countries had done in 1919-20, and have, in the present season, to record yields in excess of their pre-war average, Belgium by more than 50% and Italy by about 100%. In the Netherlands and in the United States, cultivation of sugar-beet experienced some development during the war, and, compared with pre-war data, the Netherlands show an increase of 2% in 1919-20 and of 34% in 1924-25, while the United States report 19% more in 1919-20 and 78% more in the current season. Taking the sugar-beet growing countries as a whole, the yield (which in 1919-20 had fallen to 40% of the pre-war figure) in 1924-25 was equivalent to more than 90% of the outturn realized previous to the war.

Concurrently, the production of cane-sugar in hot countries has been on increase, the aggregate in 1919-20 of 131% on the pre-war level attaining to a percentage of 153 last season, with noteworthy additions in Brazil, Cuba, Formosa, Java, the Philippines and, more or less, in nearly all the minor producing countries.

Consequent on the concurrent increase in the yields of beet-sugar and cane-sugar, it is therefore the case that the aggregate quantity, which was 12% below the pre-war level in the season 1919-20, appears to be about 25% larger in 1924-25 than the average for the five pre-war years.

Economics in the West.

Economic Waste.

London, 1*st April* 1925.—Contemporary opinion as to the cause of social poverty fluctuates between two explanations. One school asserts that, in spite of the apparent productivity of our machines, too little wealth is produced by our farms and factories to provide the people with an adequate income. Another group claims that ample goods flow into being to furnish us with all we require, and saddles responsibility for our poverty upon the wastefulness of inefficient distribution.

From the first doctrine is derived the corollary that all concerned in industry must put their shoulders to the wheel, and that the collective effort and combined energy of labour, capital, and management must be directed towards increasing output. The second thesis yeilds the belief that reform of our distributive mechanism would reduce the margin of outlay between producer and consumer, and, by the economies thus effected increase the wealth and welfare of the country. It is not necessary to find the whole explanation of poverty in bad distribution ; production may also be insufficient to meet every need of civilized life in modern communities ; but undoubtedly shortening of the distributive chain is urgently required. In response to the widespread recent demand for inquiry into the high cost of living and for explanation of the increased spread as against pre-war days between the sum the producer receives and the price the consumer pays, there have been set up the Committee on Trusts, the Linlithgow Committee, and the Royal Commission on Food Prices ; and the fruit of their labours, set forth in numerous reports, Blue Books, and White papers, has been the undoubted revelation of serious defects in our methods of distribution.

America's Example.

In America this problem has just begun to be faced. The American Academy of Political Science recently published a volume of studies entiled " Scientific Distribution". Still more interesting is a National Distribution Conference, convened in Washington in January last by the United States Chamber of Commerce. The conference attacked the problem from its practical side, in the hope of eliminating waste and effecting large economies.

Mr. Hoover, now the American Secretary of Commerce, whose European fame is based largely on his organization of food supplies immediately after the war, opened the conference with a speech on economic waste, a subject into which for some time past inquiries have been conducted under his auspices. He is reported as follows :—" In speaking of waste, I do not mean waste in the sense of wilful waste, but economic waste, which is the natural outgrowth of a competitive system. I do not mean the waste that any single individual can correct by his own initiative, but the waste that can only find remedy in collective action.. The kinds of waste that cause costly losses may be roughly catalogued as shown below. . . .These wastes are not the small change of industry and commerce. There is scarcely a step in this accomplishment of squeezing out waste which does not interpret itself in millions of dollars of annual savings."

List of Wastes.

(1) Waste from the speculation, overstrain, relaxation of effort and extravagance of booms, and the infinite waste from unemployment and bankruptcy which follow with the inevitable slump.

(2) Waste due to the excessively seasonal character of production and distribution.

(3) Waste caused by the lack of standards of quality and grades, and from unnecessary multiplication of terms, sizes, and varieties.

(4) Waste due to inadequate transportation and terminals, to inefficient loading and shipping, and to unnecessary haulage.

(5) Waste caused by lack of exact information as to existing stocks of commodities, and their rate of production and consumption, together with the risks and speculation attendant on such ignorance.

(6) Waste due to disorderly marketing, particularly of perishable commodities, with its attendant gluts and shortages.

(7) Waste due to enormous expenditure of effort and money on advertising and sales promotion without enough basic information for wise guidance of the outlay ; due to destructive competition of people inadequately trained ; in short, due to the existence of too many links in the distributive chain, and of too many chains in the distributive system.

(8) Waste caused by lack of uniformity in business practices, terms, and documents, with consequent misunderstanding and disputes, and the frauds and unfair practices of a small minority.

(9) Waste due to bad credits.

(10) A multitude of wastes in the use of materials and in many other directions.

The Greatest Waste.

Naturally, not all of these wastes are equally large or important. "The greatest waste of all our economic system," said Mr. Hoover, "is the periodic inflationary boom and its consequent ensuing slump with all the speculation, unemployment, and extravagance, for without boom there is no slump. The correction of this waste lies in the prevention of booms. No sensible businessman wants either boom or slump. He wants stability." This sentiment will be heartily re-echoed by our business community, still languishing from the after-effects of the post-war boom, and staggering under the weight and misery of a million and a quarter workers even yet unemployed. Mr. Hoover continues :—"Solemn statistics are the greatest preventive of speculation and profiteering ever invented.... If we had a census of distribution I am convinced that this information would automatically eliminate a great amount of waste in the whole distribution machinery."

The outcome of the conference at which this speech was delivered has been the formation of six committees to investigate various aspects of the problem. The committees will inquire into the collection of business statistics as a means towards accomplishing economies of production ; into various aspects of commercial relations ; into market analysis, advertising, and advertising mediums ; into the expenses of selling and manufacture, and economics which can be effected therein ; into methods of distribution ; and into general conditions and legislative action affecting distribution.

The investigation which has been thus begun opens out large prospects. Able researchers who enjoy the confidence and assistance of the business world will undoubtedly lay their finger on many ulcers and discover numerous specific remedies. In the degree that success crowns their inquiries the elimination of waste will heap yet higher America's fabulous wealth. Observers in this country and all concerned to improve our economic system, to increase efficiency and to multiply our sources of strength will watch with close attention the progress of this investigation. Perhaps more may be done. America's problems are not precisely those faced by Great Britain. The econom c structure of a contiguous area necessarily differs from the industrial, financial, and commercial organism whose parts are scattered in both hemispheres and all quarters of the globe. Alike in customs and traditions, in temperament and character, the American business community, while often similar to, is also different from the British. America is still in a stage of vigorous efflorescence and of growth almost boisterous. Great Britain at least, if not the Empire, has reached a more settled state of maturity. Nevertheless conditions in this country also require research and inquiry. The industrial and commercial world in Great Britain could perhaps consider with profit, says a correspondent in the *Times*, by what further means cyclical fluctuations of trade may be curtailed and controlled ; whether statistics of production, of consumption, and of stocks will not assist in the efficient direction of industry, and whether better organized methods of distribution will not conquer fresh markets and increase the wealth of the community and the welfare of its members.

Building Research Board.

A correspondent writing to the "*Times*", states that developments in the work of the Department of Scientific and Industrial Research that are now under the consideration of the Government are likely to have a far-reaching effect upon the engineering and building trades.

Recently in the House of Commons Mr. Neville Chamberlain mentioned that he was considering whether the activities of the Building Research Board should not be further extended ; and on the next day Sir Kingsley Wood, his Parliamentary Secretary, stated that, although he could not anticipate future estimates, the Government were prepared to do all in their power to further the promotion of research in housing. These statements foreshadow an extension of the work of the Building Research Board, which is a branch of the Department of Scientific and Industrial Research.

All experts are agreed that there is ample room for further scientific research, especially in the direction of developing still further the traditional methods of building. A great deal has been heard during the past few months about the all-steel house, the all-wood house, and the all-slate house. Is it, however, certain that we are obtaining the fullest possible production out of the old methods of brick and concrete ? The reply of the experts is that in the present state of modern science there is an urgent need to discover quicker and more economical methods,

for example, of manufacturing bricks, and of using natural resources, such as slag, in order to make building materals. During the war, research into aircraft taught us much. The best brains of the country were applied to the problems of aeroplane construction, and by 1918 scientific investigation applied to timbers and metals had changed our whole outlook.

It is claimed that there is need for similar research into existing methods used in building and into the use of the traditional materials. Can we not quicken production? Cannot great savings be effected by standardization? Are we not wasting money because of our inefficient and old-fashioned ways? These are some of the questions that the Government intend to try to answer, so far as resources of modern science may make it possible.

A comparison with the United States of America shows how we are lagging behind. In this country only £12,000 a year is being spent in the maintenance of the Building Research Board, which occupies a set of war-time huts at Acton, with laboratories and apparatus inadequate to its task, but made to serve owing to the enthusiasm and ability of the staff gathered round the former Director, Mr. H. O. Weller, and the present Director, Dr. R. E. Stradley. In the United States last year £350,000 was spent on the Bureau of Standards, which is largely concerned with building research. Mr. Hoover, the Secretary of Commerce, is an enthusiast on research, and under his charge the work of the Division of Building and Housing is being actively pressed forward.

The official report of the Bureau for 1924 states that the work of the Division of Building and Housing led to "a substantial conservation of material and a saving of millions of dollars". A code has been drawn up with an appendix for a Manual on Housing Construction, which is used as a general guide to good building practice. The plumbing code provides a scientific code for installations in small houses. The collection of building prices and current statistics receives "increasing commendation from the industry".

Above all, there has been an attempt to reduce the duplication of sizes and the variations of specifications of building material that adds so much to the cost of house-building in Great Britain. In 1923 the Bureau had over 400 conferences with manufacturers, and in co-operation with the industry many reductions have already been effected. For example, the variation in sizes of paving bricks has been reduced from 66 to five, of rasps and files from 1,351 to 496, and of wire fencing from 552 to 69, while 60 per cent of the variations in timber have been eliminated. Last year in America five billion dollars were spent in building, and Mr. Hoover asks how much more could not have been saved had building practice, bricks, doors, windows, been still further simplified.

This example from the United States is given to indicate a possible direction of the work of an extended Building Research Board. At a time when we are spending in this country over a million pounds a week on housing, or £60,000,000 a year, it is obviously desirable and essential that research should be properly supported. In addition to the question of developing traditional methods of building and encouraging simplification and standardization, there is urgent need for investigation into all new methods and materials that may be submitted to the Building Research Board by the Ministry of Health. A forward move in the direction of science working closely with the building industry is clearly indicated in Mr. Neville Chamberlain's pronouncement.

Characteristics of Business Men.

It is a common error on the part of those not intimately acquainted with business men in the true sense to assume that they are swayed solely by materialist motives. It seems quite natural to suppose that a man whose life is spent in some form of trade should become so immersed in the pursuit of wealth as to be unresponsive to all other appeals. In fact the true conception of modern business is very different. Though in some cases it is tinged by the instinct of the collector, the outlook of the business man is far wider than that of most other classes. He sees commerce in its true perspective as the manifestation of human progress, and he is accustomed to regard fresh enterprise, not solely from the point of view of prospective profits, but also as offering new spheres for activities that will ultimately benefit the world. Indeed, those who know the "City" are aware that nowhere are sentiment and tradition more warmly cherished than among those who do business there. That is the real reason of the attachment of staid men of affairs to the customs and practices of their forefathers, and the explanation of the curious old-world toasts drunk at City banquets.

This filial piety, unacknowledged, but none the less sincere, gives a clue to the generosity of business men in response to any appeal on behalf of those suffering from misfortune or sickness. The real "City" man may be

undemonstrative, but he is sensitively loyal ; he is conservative, but extraordinarily sympathetic, and at heart he is intensely proud of London in all her moods and with all her shortcomings. Her historic buildings are dear to him, because they have echoed with the footsteps of earlier generations of Londoners ; because they have been intimately associated with some of the most momentous epochs of British history ; and because they have played their part in the world-wide development of British commerce. Men owe much to their environment, and it is an inspiring idea, which one would be loth to regard as entirely imaginary, that the spirits of the illustrious dead, generations of honest merchants and hardy mariners, jealously watch the inheritors of all that they sought to found and establish.

St. Paul's Cathedral epitomizes City history. It is not "Old St. Paul's," but it carries on the famous traditions of London. In its inception it recalls London's great disaster, and its present plight had its origin in the exigencies of the time in which it was reared. The fund now being raised by the Dean and Chapter through the medium of the *Times* for the restoration of the Cathedral makes, therefore, a special appeal to business men, and it is fitting that the help of the business world should be sought through the British Chambers of Commerce. The London Chamber has been specially invited to exercise its great influence on behalf of the fund, and the sister chambers distributed throughout the United Kingdom have received an appeal from the president of their association, himself for many years a tireless worker in the public life of London, to help the good cause.

Synthetic Cocaine.

During the past month there have been a number of interesting developments in connection with pharmaceutical wares.

The synthesis of cocaine has been an accomplished fact, scientifically and commercially, for some months. The artificial article, tartrate of dextro-pseudo-cocaine, is a product of German research, and it has been a question whether its possession and distribution are subject to the Dangerous Drug Acts passed to check addiction to morphine, cocaine, ecgonine, heroin, and their respective salts, and medicinal opium and preparations thereof above a certain strength. These are the articles specified in the statute, which, however, provides for the addition by Order in Council of any drug which "is or is likely to be productive if improperly used of ill effects substantially of the same character or nature as, or analogous to, those produced by morphine or cocaine."

The first interesting question is, Is the term cocaine restricted to the Pharmacopœia requirement of an alkaloid (orrather an alkaloidal salt) derived from a vegetable source, the coca leaf ? The Home Office, it is believed, takes a broader interpretation, and regards as within the Acts any substance which by its chemical composition or reactions is or contains cocaine in the ordinary meaning of that word, whether or not it is derived from a vegetable raw material or synthetically.

But notwithstanding statements to the contrary, the German synthetic "cocaine" is not at present regarded as coming under the Acts and within their tight control. The official view is that it is chemically distinct from cocaine, and therefore cannot be treated as such, although in fact it is an isomer of cocaine; nor, pending further investigations, can it be added to the list of drugs enumerated on the ground of producing like effects to cocaine.

New Essential Oil.

In the sphere of perfumery raw materials there has just been introduced into this country, and through London to the rest of the world, an essential oil from a specie of *Araucaria.* Although grown and distilled in New Caledonia, the energetic research workers at the Technological Museum, Sydney, have keenly looked into the merits of this product, which seems to have distinct possibilities as a fixative and modifier in perfume manufacture. In odour it is something of the order of guaiac-wood oil.

In connection with the note on Land Mortgage Banks in Madras published in this *Journal* for April, (see p. 143), we note from the fuller details available from papers published with the Government Memorandum on the subject, that these Banks should confine their operations to an area no part of which will be more than 6 or 7 miles distant from the banks' headquarters. The Government contribution to each of the four experimental banks is to take the form of purchase of debentures upto a limit of Rs. 50,000 and subject to the further restriction that Government will only take up an amount equal to that subscribed for by the general public, we hope to publish further particulars in an early issue of the *Journal.*

Canadian Trade and Finance.

Montreal, April 1st, 1925.—In those sections of Canada where unemployment is at its height, where trade is poor, and where prospects seem none too good, the statement that better times are at hand would not readily be accepted. Yet there have been favorable developments which give hint of better business in 1925. The brightest spot in the whole situation lies in the West, where prices of grain have been high and where the distribution of the recent 35c. payment by the wheat pool has already produced some improvement. The statistics of western wheat deliveries to date indicate that some upward revision of the 1924 wheat crop estimate will be necessary, a favourable development. The farmers of British Columbia were also fortunate in regard to the prices obtained for crops and fruit, so that the buying power of Canadian farmers has been measurably improved. All through the country, live-stock have wintered well and the high cost of grain is already having some effect upon the price obtained for select beef. The farmers of the Maritime Provinces, however, are confronted by low prices for their apples and potatoes. The English embargo upon potatoes and the large crop in the United States has reduced the price to 75c. a barrel, nor can $2.50 a barrel for apples be considered a satisfactory return.

It is too early in the year to report at all definitely on building prospects, but the fact that building reports for August, September and October were definitely less than those of the previous year, while the reports for November, December, January and February are more nearly normal, suggests the improvement in this field. Prices for material and wages are lower than at any time since 1925. Reports from all sides indicate that an improved volume of building is contemplated for 1925.

In the lumbering industry, the lack of brisk demand from England and the United States has produced discouragement, yet the inquiries for U. S. lumber that are now coming from England may indicate that more inquiries will be received here shortly. Certainly, if the volume of building increases as suggested, there will be immediate improvement in the lumber situation. Newsprint production for January broke all records, and the prospects in this industry seem good.

Steel and iron reports are more favourable, with increased railroad orders as the predominant factor in the market. Increasing shipments of Fords to Australia and more employment throughout the automobile industry reflect improved conditions in this field. The textile trade continues to do well. Boot and shoe factories and electrical and agricultural implement factories are still on part time, but for the agricultural implement factories, at least, the increased buying power of the farmer should produce a change shortly.

In the East, the outstanding factor in the employment situation is the extreme severity of the coal strike. This situation is so acute that there can be no recovery there for some time to come, even if the strike is settled in the near future. While it is undoubtedly true that there is widespread unemployment in other parts of the country, recent reports indicate that with the coming of Spring, the situation is becoming less acute. In Ontario, statements from 5832 concerns, employing 709,878 people on February 1, 1925, indicate an increase of 16,821 over the number employed at the beginning of the year. The labour requirements, both in manufacturing and logging, are increasing. The coming of Spring is expected to produce sufficient demand for farm labour to care for the situation in the Prairie Provinces.

From British Columbia come reports that the excess unemployment due to the influx of outside labour will be taken care of by the first of April.

As yet wholesale and retail trade are reported as slow all over Canada, and collections are only fair ; but when the time of year and the long period of depression are taken into consideration this report is not surprising. It is when we turn to Canadian foreign trade reports that we can detect trends that point toward more fundamental improvements.

Foreign Trade.

With an export business of $1,058,057,898, and a total foreign trade of nearly two billion dollars, Canada's products are becoming a more and more important factor in international commerce. Already her wheat exports dominate the world market, and her exports of pulpwood and newsprint are the world's greatest resource for paper. Of course, the backbone of the Canadian export trade consists of wheat and flour, lumber, pulp and paper, the annual value of these exports amounting to nearly six hundred million dollars.

It is interesting, however, to note the rapid development of Canadian mineral resources

that is now taking place. The export of the non-ferrous metals, such as gold, silver, aluminium and nickel and their products, has more than doubled in value in the last three years. For 1924, these exports were valued at $84,779,114 and within a very short time this group will pass the $100,000,000 mark. The most rapid growth has taken place in gold exportation. In 1922, four million dollars worth was exported, in 1923 this had more than tripled and, in 1924, 28⅓ million dollars worth of gold was exported. The rapid development of the gold fields of Northern Ontario and Quebec promises even more substantial future development. In the manufacturing industry, the steady growth of the exports of automobiles, machinery, and farm implements should be noted. The value of the farm implements, cutlery and machinery exported has more than doubled in the past three years, their combined total now being about eighteen million dollars.

The United States and Great Britain continue to be our best customers, taking 60% of our products and selling us in turn about three-fourths of our imports. The United States buys 40% of Canada's exports and sells us two-thirds of the goods we purchase, while the United Kingdom stands next, taking one-third of Canada's exports and furnishing nearly one-fifth of the whole amount of goods bought. Among our other important customers we find Brazil, France, Germany, Japan and the Netherlands, each of whom buy more than ten million dollars worth of our products.

This past year, Canadians bought $799,982,000 worth of goods from the markets of the world, including nearly $180,000,000 worth of iron and its products and $130,000,000 worth of textiles and textile materials. Besides this, we bought large quantities of petroleum, sugar, tobacco, coffee, tea and rubber. A large part of the iron products, the cotton, wool and rubber goods came from the United Kingdom and the United States. From the United States came also most of the petroleum, automobiles, electrical apparatus and tobacco. Sugar from the West Indies, Cuba and the Dominican Republic, Brazilian coffee, East Indian tea, and beverages from the United Kingdom, France and Spain were all imported in large volume.

While exports have grown steadily for the past three years, imports have remained nearly constant, so that there are few major changes in the trend of trade during the period. Exchange of goods with both the East and West Indies, New Zealand and South America is growing a little more rapidly than that with other countries. It is interesting to note that imports from Germany have again reached the average value that was characteristic of the years 1900-1910, although still only half as large as in 1913.

Imports of textiles, iron products, (including machinery) and metals, seem to be growing, while there has been a relative decrease in the imports of chemicals and agricultural products. The actual decrease of imports of animal products is particularly marked during the last three years. This includes a reduction in the importation of lard, butter and eggs to half the level that was characteristic three years ago.

In general, the last years have shown a tendency toward comparative constancy in the value of imports and a steadily increasing value for Canada's exports.

Shipping.

The difficulty that Australia is experiencing in attempting to sell her unprofitable Merchant Marine calls attention to the excess number of ships all over the world. Recent estimates indicate that there are 20% more ships afloat to-day than in 1913 and that there is 20% less freight to be carried by these ships. Competing ship-owners have reduced freight rates to a minimum and this rate situation has been complicated by the tactics of the United States Shipping Board, the sharp competition from the German ship-owners who are trying to regain an important place in commerce, and the competition of the lines subsidized by various governments. In their annual reports, the great shipping lines declare that since 1913 the cost of shipbuilding has increased 60% and the cost of operation by 75%. They state that they have had heavy operating losses during the past two years and that in no case are ships now paying interest and depreciation charges. Amid such conditions, Lord Inchcape declared shipping "stormy with a confused sea".

The world shipping fleet of 1913 consisted of 30,591 ships of about 46,000,000 gross tonnage. To-day this fleet consists of about 33,000 ships of 61,000,000 gross tonnage. The maintenance of such a fleet would require the launching of about 3,000,000 tons per year. Since 1921, the rate of building has decreased until, at present, condemnations and losses are taking place somewhat more rapidly than replacements; supply is slowly adjusting itself to the decreased demand.

Recent progress towards the achievement of balance in supply and demand for ships is

partially measured by the fact that while there were nine million tons of idle steam shipping in 1921, this surplus had been reduced to six million tons by January 1, 1925. Of this latter amount, 3½ million tons were owned by the United States Shipping Board, and there is good reason to believe that most of these ships, which are now lying tied up, were so poorly constructed, and are so comparatively inefficient, that they will never put to sea again. During the war and post-war shipping boom, rates rose much higher than had been thought possible in 1913, but the present depression has reduced rates until the United States Commerce Reports of February 23, 1925, show an index for world freight rates only 5% higher than those that prevailed in 1913.

Most ship-owners would prefer to see shipbuilding brought to a complete standstill until the present shipping depression is over, since, according to their viewpoint, the construction of each additional ship accentuates the present oversupply. They resent government subsidies for shipbuilding, because they feel that the stimulation of production at this time will make the situation more difficult later. They are pessimistic in regard to the future volume of world trade and they point to the financial situation in Europe, the nationalistic reactions that are encouraging home production, the reduced American immigrant business and the decreasing use of coal in shipping as factors that tend toward permanent reduction in the volume of international trade.

In spite of these factors, improvement in trade in Europe and the United States, the prospect of increasing business in South America and Canada, the gradual stabilization of the foreign exchanges and the return of international confidence, all point toward a substantial business revival. Certainly the revival in the shipping industry cannot be delayed more than two or three years, unless political events delay the growth of international trade.

The history of shipping and shipbuilding has been characterized by periods of intense competition and competitive building, followed by periods of severe depression. Recent industrial research has emphasized the necessity for reducing the waste due to the severity of the business cycle.

It is just possible that the steady persistent building which is taking place during this period of shipping depression will produce enough ships so that the anticipated trade revival of the next five years will not find so acute a shortage of ships as in the past. Shipbuilding and shipping competition may proceed in more nearly normal volume without the over-stimulation that has been characteristic of former revivals, and the severity of the fluctuation of business in this industry may be somewhat reduced, thus helping the general stability of international commerce.

Middle-class Unemployment in India.

Sir George Godfrey, Agent, Bengal-Nagpur Railway, writing on the above topic in the *Bengal-Nagpur Railway Magazine* says:—

We are all struggling to secure economy in working results. In my opinion one of the chief obstacles to economy is the large number of men that have to be employed on the lower kind of clerical work in all Railway Offices and as Porters and Pointsmen at all our stations.

The eastern side of India, (I cannot speak for the west), is on the verge of a great unemployment problem, not amongst the coolie-labour class, because that class is never in excess of demand, but amongst the sons of the lower middle class. In my opinion, the solution of the problem will be that this class should take up much of the work which is now done on Railways by the coolie class.

At Home and in Europe generally, Porters, Pointsmen, Coupling Porters, and other men doing work of this nature are intelligent, they are well paid and they are efficient—in their off-time they take part in the social amusements and entertainments of their community. In many cases Porters on English Railway have risen to be Chief Clerks at stations, Station Masters, and even the higher ranks.

We could afford to pay our Pointsmen a bigger wage if they were more intelligent and did the work of two of the present type, and this would not be difficult. I should much like to see the young boys who are growing up now, who are sons of the lower-paid clerks, Assistant Station Masters, etc., taking to this kind of work. The coolie class could then be relegated to their proper work such as agriculture, earth-work, permanent-way gangs, etc.

This solution, however, of the unemployment of the offspring of the lower-paid clerical classes, of which the numbers are increasing so rapidly year by year, would mean such a complete revolution of the social ideas of that class that I do not feel very hopeful that it can be brought about.

Books in Brief.

Short Reviews of Recent Books.

Europe Overseas.

By James A. Williamson. Published by the Oxford University Press, London. Price *2sh. 6d.*

Mr. Williamson deserves to be complimented on producing, within the small compass of a book of about 140 pages, a commendable and on the whole reliable volume dealing with the expansion of Europe all over the world. The story is told in a simple, straightforward and scholarly manner. Mr. Williamson does not obtrude his political opinions, though occasionally we have caught him lapsing into suggestions or phrases which he, no doubt, would strike out in revision. The statement on page 112, for instance, that "everywhere in independent Asia, notably in Japan, perceptibly in China, European culture is in the ascendant and native culture in decline," is only true to a limited extent. Few would subscribe to the theory that "native culture" is in decline. Mr. Williamson says that in the West Indies, the European has, "by an act of altruism," in fact, made a present of much of the inheritance to his former slaves, etc., etc. The "altruism," suggested would be hotly contested in certain quarters. Mr. Williamson, again, talks of "native ingratitude" in Egypt, etc., which again is matter for debate. Lapses such as these, however, do not take away from the merits of Mr. Williamson's volume, which is, on the whole, written in the spirit of critical scholarship. His is a study well worth perusal by every publicist in this country. We would particularly invite the attention of Indian readers to the final chapter in his book which is headed "To-day and the Future", in which the author sets out what he thinks will be the trend of European migration in the future. He answers in it the following interesting questions:—Is European expansion on the eve of a new period in its development? Is the present European hold upon certain regions imperilled? He thinks that Europeans in Australia live in that continent in "a condition of political strain comparable to the strains in the earth's crust which give rise to volcanic eruption". He adds that Europeans in Africa and Australia alike, "live under the threat of a catastrophe". Is European power on the wane in Asia, he asks. And he answers, "The answer now is almost certainly, yes." After referring to Japan's success over Russia, he says:—"India began to agitate for political liberty, and to-day she has representative institutions with whose scope she is, by no means, satisfied. At the same time she is imitating Japan by adopting those industrial methods which lead to power. In Egypt, Syria, and Mesopotamia, the British are avowedly working to set up self-governing Asiatic States. The European who would stay permanently in Asia is confronted with a dilemma. Does he rule there for the benefit of less advanced peoples, and if so, ought he to coerce them when they are convinced that they can govern themselves? On the other hand, if he is in Asia for his own benefit, will it pay him to fight against a great Asiatic resistance and will be backed in so doing by the necessary moral support from home?" A book to read and ponder.

Handbook of Sericulture.

By M. Yonemura, Late Silk Expert, Mysore Sericultural Department and N. Rama Rao, B.A., B.L., Superintendent of Sericulture in Mysore. Government Press, Mysore.

This is an illustrated handbook devoted to the rearing of silk-worms in the Mysore State. It gives an excellent account of the rearing process and we would strongly recommend it to those interested in the poli-voltine races of silk-worms. Messrs. Yonemura and Rama Rao have between them produced a handbook which will, for long, be consulted by rearers in Mysore. The substance of the work deserves, in our opinion, to be put into readable Kannada and widely circulated in the State. The work of the Sericultural Department in the State has been one of increasing utility and the publication of a handbook of this type is a sign of its vitality.

A Nation in Making.

By Sir Surendranath Banerjea. Published by the Oxford University Press, London, Bombay and Madras.

We have read this book with great pleasure, though not unmixed with the feeling that it is to some extent marred by a certain trace of bitterness, which strikes us as unfortunate. To any one acquainted with the distinguished author and his public work, it would be unnecessary to say that Sir Surendranath has written his reminiscences with a full sense of responsibility. It is to be feared, however, that when he writes of "Non-Co-operators" and "Swarajists" he is on uncertain ground. His words apparently run away from him and his criticism of men and things connected with them are tinged with personal feelings of a kind that would be unpardonable in an ill-known (or rather less well-known) author. But Sir Surendranath is a veteran and many things may be forgiven him. The past is always dear to us; the old political methods are known to us; and the old warriors are as friends to us. All this may be forgiven—may be accepted as true. But it *does not* follow that new times do not bring their own problems; that they do not require new methods; and that new associations are not inevitable. It is wisdom to note these truths as well. But they *are not* sufficiently recognized by Sir Surendranath in the judgments he passes on his political opponents. This seems a pity, for Sir Surendranath's "Reminiscences" is so full of good meat that we sat and got through it at one stretch. It is the production of a born fighter who has made history and what is more, feels it. The recent history of India is enshrined in its pages in authoritative fashion and the hero of the book is *himself*—not by choice but by force of fact. Sir Surendra can look back with pride on his work; he can see his vision has been fairly

realized ; and he can verily think little of the newer ideas, with which he cannot (and for one thing need not) reconcile himself. Sir Surendra has so much to record that he can well afford to lay down the role of *critic* and take up, more and more, that of *narrator* of history—we mean his own personal history. Perhaps this may be possible in a new edition of the book, which cannot, we are certain, be long delayed. Sir Surendra's method of recording his remniscences is unobjectionable, though it is tantalizing to a degree to the reader to be drawn backwards and forwards. That perhaps is inevitable to some extent in a book of this nature. The biographical vignettes he gives us of the early founders of the Congress, and of other Englishmen and Indians he has worked with make Sir Surendra's work not only valuable but also thoroughly enjoyable. Often—especially in the latter portion of the book—we feel him speaking or rather orating to us, than writing. The book bears the impress of his eloquence—it is both lucid and silvery. There are a few repetitions of facts but they can be early detected and deleted when the revision takes place. In no carping spirit, but in a spirit of gentle helpfulness we would point out that the Madras Chief Justice mentioned at page 90 of the book was not "Sir William Turner" but "Sir Charles Turner", one of the greatest Chief Justice that Madras has ever had. We have no doubt that the book will pass through successive editions and be read through and through both in this country and in England. To those in England who feel that every critic of British administration in India is a covert or overt revolutionary this book should prove an eye-opener. It ought to prove convincing in the sense that the Indian in India is no worse or no better than the Englishman in his own land when he is charged directly with the duty of governance—he will be found to be a Conservative rather than a Radical or Revolutionary. Sir Surendranath's auto-biography should show that full self-government, if granted, to India will prove more beneficial to England and less dangerous to India than the average man-in-the-street or the high politician in England thinks. It is for this reason that we would wish for a large circulation of this book of Remniscences of the greatest agitator that India has known in British times in England. It is not so much an indictment of British Rule in India as a justification for its continuance on more rational, intelligible and advantageous lines to the mutual benefit of both the countries.

Present-Day Banking in India.

By B. Ramachandra Rau, M.A., L.T., Lecturer, Calcutta University. Second Edition. Published by the University of Calcutta, Calcutta.

This is a revised and in some respects enlarged edition of the first edition of this work, which was reviewed in these pages not long ago. The author deserves to be commended for the laudable attempt he is making in getting honourable Banking methods prevail in this country. His chapters on Joint Stock Banks and Banking Reform show that he can be both suggestive and warm. He urges stringent Banking legislation and we entirely agree with him in this matter. It is true that legislation cannot achieve everything; still, it can accomplish much. The selection of Directors in Banks, lending on industrial securities, borrowing by Directors, relation of Reserve to dividend and many other matters require careful looking into in this country. Legislation should not be delayed much longer. In urging reform in these directions, the author has, in our opinion, done the right thing. He knows which way the wind is blowing and it is but right that those interested in credit questions should know what he says. We commend this new edition to all interested in Banking in India.

Wages and Profit-Sharing.

By R. N. Gilchrist, M.A., I.E.S., Labour Intelligence Officer, Bengal. Published by the University of Calcutta, Calcutta.

We welcome this book which is written in a spirit of helpfulness. The general European position as to payment of wages and profit-sharing and co-partnership are dealt with in readable fashion in the first two parts of the work. Both these parts are excellently done and ought to prove useful to those interested in re-adjusting industrial labour. The third part deals with industrial peace and the payment of wages in India, in which the Indian aspects of the subject are treated of by the author in the earlier part of this work. Mr. Gilchrist generally writes with such precision and with such knowledge and, his work is so good generally from the learners' point of view that there is little to take exception to or criticize from an adverse point of view. There is, however, one point—it is, in one sense, a minor one and does not affect his general argument or the excellence of his production—and to it we would just refer to here. He says controverting the position that there is no unemployment in India "as understood in the West":—"There *is* an unemployment problem in India, of its own kind, and a much more serious one than the West has known." He then adds:—"The Indian unemployment problem arises through famines, and the steps taken by the Governments of India to deal with famine in the Famine Codes—are without doubt the finest unemployment machinery the world has ever seen." This is an oft-repeated eulogy and it seems unfortunate that it should be accepted *ad nauseum* even by economists and economic investigators. What makes famines possible in India ? Why should people live on the verge of starvation to be liable to be carried away by Death by the failure of a single monsoon ? Why are the staying powers of the people so low ? Why are they unable to save, though they are, as a race, thrifty ? Despite their simple requirements, they are unable to keep by anything for the hour of trial. Why is this so ? Answers to these questions are required and references to Famine Codes will not satisfy the people of to-day in India.

☞ *Books are given at concession rates only to subscribers of "The Mysore Economic Journal". Any one who wishes to buy books at concession rates must remit Rs. 6, one year's subscription to the Journal in advance.*

Punjab Board of Economic Inquiry.

The following is a summary of the Proceedings of a Meeting of the Board of Economic Inquiry, Punjab, Rural Section, held in the Financial Commissioners' Room, Lahore, at 11-0 a.m., on Wednesday, the 15th April 1925 :—

Present :

C. M. King, Esq., C.S.I., C.I.E., I.C.S., (*Chairman*). Prof. Brij Narain, M.A., L. Shiv Dyal, M.A., L. Mulk Raj, Bhalla, Pt. Vishnu Dutta, M.A., LL.B., W. H. Myles, Esq., M.A. (*Honorary Secretary*).

An apology for non-attendance was intimated from H. Calvert, Esq.

1. The minutes of the meeting held on the 11th February 1925, were taken as read and confirmed.

2. *Agricultural Indebtedness Inquiries*.—(*a*) The Honorary Secretary reported that two forms had been prepared for these inquiries and circulated to the investigators at present employed by the Board, who had been asked to have these completed and in the hands of the Honorary Secretary by the 30th of June 1925.

After some discussion it was decided that Members-in-Charge and Investigators should be informed that all non-agricultural labourers including *kamins*, should be included within the scope of the inquiry.

(*b*) The Board decided to request Mr. Strickland to undertake the tabulation of the results and to prepare a report for submission to the Hon'ble Member for Finance by 1st August 1925. If Mr. Strickland did not see his way to undertake this work, the Chairman and the Honorary Secretary were authorized to make another appointment.

3. *General Economic Inquiries*.—(*a*) The Reports from the Members-in-Charge of the Amritsar, Multan, Rohtak and Rawalpindi Inquiries were read and as they appeared satisfactory the investigators, Gian Singh, Radha Krishen, Raj Narain, and N. C. Ahuja, were confirmed in their appointment.

(*b*) (*i*) *Amritsar Inquiry.*—The Board was of opinion that Mr. Stow should be approached to act as the Member-in-Charge of this Inquiry during Mr. King's absence on leave.

(*ii*) *Multan Inquiry.*—The Honorary Secretary reported that he had been in communication with Mr. Dunnett, Home Secretary, and that Mr. Dunnett had agreed to act as the Member-in-Charge of this Inquiry, during Mr. Emerson's absence. The Honorary Secretary was instructed to convey the thanks of the Board to Mr. Dunnett.

(*iii*) *Rohtak Inquiry.*—The Honorary Secretary read the progress report submitted by Prof. Brij Narain, the Member-in-Charge of the Inquiry.

(*iv*) *Rawalpindi Inquiry.*—The Honorary Secretary read the progress report submitted by Mr. Stow, the Member-in-Charge of the Inquiry.

(*v*) *Jullunder Inquiry.*—The Honorary Secretary reported that Anchol Dass Kandola had been appointed to undertake this Inquiry, and has started work on 6th March 1925.

(*vi*) *Lyallpur Inquiry.*—The Honorary Secretary reported that S. Jaimal Singh should begin work on 1st May, and that Mr. Penny, in the absence on leave of Mr. Roberts, had agreed to act as the Member-in-Charge.

(*c*) The Board was of opinion that investigators in the Amritsar, Multan, Rawalpindi and Rohtak Districts should be informed that they ought to complete their inquiries in the villages, if possible, by the end of October, and allow themselves the months of November and December for writing up their reports.

(*d*) The Board agreed to three new inquiries on the lines of the General Questionnaire being started as from 1st June, and authorized the Chairman and Secretary to choose the districts, select the Members in-Charge, and appoint investigators.

4. *Kangra Inquiry Report.*—Mr. Calvert's letter dated 7th April 1925, on this subject was read. It was noted with regret that it would be impossible to proceed with the publication of this report until October.

5. *Ferozepore Mortgage Inquiry Report.*.—(*a*) The Honorary Secretary reported that the results of this investigation were now in the press, and the Board authorized the publication of 2,000 copies.

(*b*) Mr. Calvert had previously suggested that two more Mortgage Inquiries should be undertaken by the Board. At its meeting on the 3rd January 1925, the Board decided to postpone these on account of financial considerations. It was agreed that these two inquiries should now be proceeded with, and Mr. Calvert was authorized to act as Member-in-Charge of both inquiries, and to appoint investigators for them. It had been suggested that one should be in a dissimilar tract in the Ferozepur District, and one in another district in a Muhammadan tract where the agriculturist money-lender was less in evidence. This the Board considered satisfactory.

6. *Economic Value of Goats in the Punjab.*—The Honorary Secretary reported that this Note had been submitted to the Editors of the Indian Economic Journal for acceptance. If accepted, it was agreed, that the Board secure 1,000 reprints of the article instead of 500 as previously sanctioned.

7. *Size and Distribution of Holdings in the Punjab.*—The Honorary Secretary reported that the first proof of this had come to hand from the press. The Board authorized the publication of 2,000 copies.

8. The Honorary Secretary reported that out of an income of Rs. 10,444–12–0 during the previous financial year—(1st April 1924 to 31st March 1925)—the Rural Section had spent Rs. 4,855–14–5, leaving a balance in the Bank of Rs. 5,588–13–7. It was noted, however, that this balance will be required to pay for the publication of work completed during the last financial year.

9. The Board agreed that in the event of the Honorary Secretary leaving India during the summer vacation, Mr. Calvert be asked to officiate as Secretary.

10. The Board agreed to recommend to the Joint Board for co-option as members of the Rural Section, Mr. Calvert, Mr. Penny and Mr. Dunnett.

11. ... .

12. A note from the Honorary Secretary on the inclusion of a certain number of photographs in the Village Survey Reports of the Board was read : also a letter from Mr. Calvert suggesting that four photographs should be included in the Kangra Report. As none of these Reports would be ready until October the question was postponed till the next meeting.

13. Mr. Calvert's suggestion to have as cover or frontispiece of the Reports of the Board a map of the Punjab with an arrow pointing to the Districts in which the investigation had been conducted, was accepted, and the Honorary Secretary was instructed to proceed with the preparation of the block and the map.

C. M. KING,
Chairman.
16th April 1925.

W. H. MYLES,
Honorary Secretary.
16th April 1925.

Indian Economic Enquiry Committee.

Evidence of Mr. C. Hayavadana Rao, Editor, Mysore Economic Journal.

Mr. C. Hayavadana Rao, B.A.,B.L., Editor, Mysore Economic Journal, Bangalore, in giving evidence to-day before the Indian Economic Enquiry Committee, which sat in the New Council Chamber, Fort St. George, stressed various points connected with the projected work of the Committee. His written evidence covered practically the whole field.

On the subject of the economic condition of the people he said that not only should data be gathered under the usual heads of, production wages, income, wealth, indebtedness and cost of living, but also the extent to which dissemination of Education has taken place among them, the effect of famines on them in paralyzing incentive, their capacity for organization and the past history of the tract they inhabit. In his opinion, no economic system can be comprehended unless it is viewed as an organization, on some scale, of historical, mental and physical factors as these are revealed by scientific inquiry.

He was for a classification of occupations on the basis adopted at the Census of 1911 by Sir Edward Gait, though with certain modifications. He would sub-divide the orders (of Bertillon on which Gait's classification is based) into groups with special reference to local conditions. Also he would take special care to see that an actual worker is classified according to his principal occupation and a dependant by the principal occupation of the actual worker supporting him; care, he said, should be taken to see that the same person is not counted twice for purposes of grouping. For collection of economic data, he said a classification that neglected neither the conveniences obtained from administrative areas nor the study of like economic areas should be adopted. He was for following the standards of the Dominions and European countries for collection of statistical data relating to the welfare of the people of this country. This course, he said, would secure uniformity and would enable comparative study. Referring to the machinery now employed for collection of primary economic data, he said they were reliable only to a limited extent. He thought a trained staff, worked from District Centres, would prove more satisfactory. Statistical training, he said, is a *sine qua non* for the collection of economic data.

Forest Statistics.

Speaking of Forest data, he said the questionnaire left much to be desired. Statistics under this head, he said, should show the annual total head of cattle grazed—(*a*) cattle, (*b*) horses, and (*c*) sheep and goats. Milch cows and work animals grazed free of charge should also be shown. The number of animals annually sustained in proportion to the area of the forests should also, he said, be stated so that comparative figures may be worked out as the years pass by. Some efforts must be made, he added, to trace the effect of forest grazing on (*a*) stock industry, (*b*) increased supplies of meat, etc., and (*c*) increased supplies of milk, etc. The effect of public control of forests should be rendered plain and demonstrated how far such control tends to serve social and economic ends. He said that a single publication containing the main statistical data relating to the people of the country is a great desideratum. Compulsory legal powers would be necessary to obtain returns, though there would, in practice, be no need to actually take disciplinary action under them. As people got accustomed to the furnishing of the returns, they would not mind the trouble or inconvenience of getting them up, especially if in the initial stages they are helped by trained men. Turning to the subject of industrial census, he said it was a necessity. A decennial census would do for the time being. He observed that it should be a detailed one, the forms used being carefully made out. This work should, in his opinion, be undertaken by the Central Bureau of Census and Statistics to secure uniformity, while to avoid friction the active aid and co-operation of Local Governments should, he remarked, be sought for and obtained. He would define large industrial establishments as those which are governed by the Indian Factories Act as amended in 1922. As regards cottage industries he said that fairly reliable statistics could be collected,—in cities by the Municipal staff and in the rural areas by the District staff. Speaking of wages, he remarked that the leaving out of payments in kind in the calculation of the nominal wage would vitiate the figures. The real problem in this regard, he added, is to collect the data required for fixing accurately the nominal wages, so that the movement of nominal and real wages in the country may be determined for stated periods of time. As to classification of wages he would favour the universalization of the Shirras' Scheme as it is a modification, according to him, in the right direction of the time-honoured Indian classification. He said that the Provinces should not be allowed to deviate from the standard classification as adopted, though they might be encouraged to give additional figures, wherever they find it necessary in the interests of accuracy. Steps should, in his opinion, be taken to ascertain the regularity of employment.

Average Annual Income.

He said the estimates so far published (by Mr. Digby, Lord Curzon, Mr. Shirras and many others) need not be taken as anything more than a convenient mode of stating the average annual income, which in the absence of more accurate figures based on a regular economic survey, might be deemed as nearly accurate as can be ascertained, in all the circumstances of the case, for purposes of comparison, etc. Some at least of these estimates, Mr. Hayavadana Rao remarked, are primarily based on the ascertained total value of agricultural produce. Other income (*i.e.* non-agricultural) should be calculated on an intelligible basis, before a satisfactory figure could be arrived at. The mode of calculating non-agricultural incomes hitherto in vogue (on the basis of distribution in proportion to their numbers as between agriculturists and non-agriculturists) cannot, in his opinion, be deemed the best that could be thought of for the purpose. A more direct mode would, he said, be necessary if greater accuracy was to be aimed at. All the relevant facts should, in other words, be adverted to and statistically worked out.

Quoting the Economist Marshall, he said: "The labour and capital of the country, acting on its natural resources, produce annually a certain net aggregate of commodities, material and immaterial, including services of all kinds. This is the true net annual income or revenue of the country, or the national dividend," provided allowance is made for the depreciation of the sources

from which it is derived. Marshall's conception is, he said, an inventory of all the new things that are made, accompanied as a negative element, by an inventory of all the decay and demolition of old things. He would favour an Income Census on the Australian model, subject to certain checks.

Wealth of a Nation.

Referring to the computation of wealth of the Indian Nation, he said he would favour a combination of the "inventory" and "census" methods. He would add to the heads proposed "Foreign Loans" and "Sundries" with the "Private" and "Sundries" under the Public head. In this connection he said that due allowance should be made for what amounts to a mortgage enjoyed by British Capitalists in India. Apart from investments in India, the sterling debt of India amounted on 31st March 1923, he said, to nearly Rs.364 crores or about half the total debt of India. This really means, he said, that Great Britain should be credited partly with India's wealth. He pointed out, by way of analogy, that Marshall credited the United Kingdom with most part of the wealth of Australia, because of the interest of British Capitalists in it. Similarly, Stamp, the great British authority on Taxation, includes, he said, in his definition of "national wealth" this item as well. In effect, in computing the wealth of the Indian "Nation", he said, the wealth of this country alone should be taken into consideration. In speaking of "wealth" in this connection, he said that not only should it be understood in the sense of productive capacity but also in the sense of things owned. Both aspects, he said, should be remembered and included in any computation of a Nation's wealth. These aspects, he added, should neither be overlooked nor confused. Income returns could be got from every individual just as income-tax returns are got now under the Income-Tax. But secrecy should be legislatively promised and insisted on.

Cost of Living.

On the head of Cost of Living, Mr. Hayavadana Rao suggested that intensive and extensive methods of study of classes and families in them should be adopted, both in urban and rural areas. Suitable organization would, he said, be necessary, operating from the District centres, under the guidance of each Provincial centre. Uniformity of treatment should, he remarked, be aimed at, to avoid personal equation. Speaking of index numbers in this connection, he said that index numbers based on wholesale prices of commodities cannot be taken to indicate changes in the general purchasing power of money, seeing that the mass of the classes and communities make their purchases retail and not wholesale. Whether retail prices follow the same course as wholesale prices would have to be observed. It would be best, he said, to frame index numbers for retail prices as well from the start. As regards Prices Current Reports, he said he saw no chance of improvement in them unless trained and responsible Prices Current Inspectors, working under proper suitable supervision, were appointed.

Personal Indebtedness in India.

Referring to indebtedness in India, he remarked to the singular barrenness of official publications bearing on the subject. Inquiries as to indebtedness should, in his opinion, include the questions whether the debt was contracted to pay off a previously existed debt and the income of the borrower (whether individual or family) and the proportion the debt bears to the income.

Initial Economic Survey.

Mr. Hayavadana Rao said that an initial economic survey through Government agency was a necessity. He said that the returns obtained should be carefully checked and verified. The questions put should, he added, be simple and direct. The local inquiry contemplated should be in trained hands, whose work should be subject to check at the Central Office. The results of house to house inquiries should be checked from independent information gleaned from employers and others, categorical questions would, he said, elicit wrong answers from bored individuals. This was within the witness' experience in inquiry extending over many years over many different parts of India. He thought that a survey of the kind, if laid out on proper lines, would, for the whole of British India, take at least three years. He could not furnish any estimate of cost at this stage of the matter.

Periodical Surveys.

Periodical surveys are necessary, said Mr. Hayavadana Rao, to check progress and decline and to maintain the utility of the economic data collected. These surveys might be once in five years, though later they may be once in ten years and conducted with the Population Census of India. Less detailed information should, according to him, be collected once every year. For "large industries" statistics should be annually collected. Between the periodical surveys, special intensive enquiries into particular topics (*e.g.*, cost of living, fragmentation of holdings, etc.) might be conducted. They should be left, in his opinion, to the direction of Provincial Statistical Organization, provided uniformity in investigation and publication of results are secured through the Central (or Imperial) Department of Census and Statistics, which might have to be formed in connection with this work. He added that the results of the initial survey for each place should be published. The idea of an Official Year Book of India on the Dominion model and on a standardized plan suitable for India, appealed to him as a legitimate ambition on the part of the new Department. He further said that a comprehensive scheme for co-ordinating and centralizing statistics in British India as has been carried out in the Dominions is a felt necessity in India. Such a scheme should, in his view, be put through with the least practicable delay. By this means an agency would be created for disseminating correct and useful statistical data relating to the material and moral condition of the people of this country. Special reports dealing with particular classes of people or particular areas or tracts of country would also be facilitated.

Organization and Cost.

As to organization Mr. Hayavadana Rao said that what he proposed under this head would be somewhat as follows :—

(1) Central Bureau of Census and Statistics for India.

(2) Provincial Bureau for each major Province or Presidency.

(3) District Bureaux under each Provincial Bureau.

(4) Branches and Agencies for collecting data and co-ordinating statistics in city, town and villages. The village, in the witness' opinion, was important and it was always best to build from the bottom. The village, town and city are recognized units of production within the District and so they must be units for the compilation of all essential statistics pertaining to themselves. He would favour a Census and Statistics Act, incorporating the suggestions mentioned by him. As to the cost of the Imperal Bureau it should, in his opinion, be met from Central Revenues, while that of the Provincial Bureaux and the District offices and branches and agencies from the Provincial Revenues

concerned. The Central and Provincial Governments should each contribute a moiety of the cost of the initial survey. Municipalities might meet the cost of city surveys. As to District Boards and villages, unless compulsion was applied to them from the start by a suitable amendment of the Acts governing them, he did not think, they would take kindly to the idea of meeting the cost of the proposed operations.

SOME FINAL SUGGESTIONS.

Concluding, Mr. Hayavadana Rao offered a few suggestions. He said that the work of the Imperial Census and Statistical Bureau should be rendered quite up-to-date and quite abreast of the times. Its work should, therefore, be chalked out on reasonably efficient lines. It would also be satisfactory if its work were examined, reviewed and overhauled, as required, periodically with the aid of a special Census and Statistics Commission, to which at least our British or foreign expert should be nominated. The work of the proposed Bureau would not, in his opinion, prove wholly satisfactory until it got under its purview by suitable arrangements for the extensions of its labours into Indian States as well, as they collectively form, in extent, more than one-third of India. Most of the major States, in his opinion, would readily agree to a reasonable scheme. Then again, he said, that the affiliation to the Board of Honorary Correspondents, societies doing welfare work, private investigators, etc., should also be considered and worked out. These would enable the Bureau to secure a network of workers all over India. Requisite facilities for training might, perhaps, be afforded to investigators of this kind. Mr. Hayavadana Rao also said that the resources of the several Universities in India may also be utilized for the collection and interpretation of economic data. The spirit and enterprize of young American Universities in the Middle West of America in this department of activities is well-known. The *Economic History of Agriculture in Minnesota* by Dr. E. V. D. Robinson, Ph.D., Professor of Economics in the University of Minnesota, is, he said, an admirable example of the industry shown by them in the collection of detailed economic facts and the lucidity into which they interpret them. Finally, the witness said that it was altogether unnecessary for him to enlarge on the use to which the collected data could be put. While their utility to Government was likely to be great, they would show, so far as the people are concerned, what is required to be done for them and in their benefit to make them better producers and better consumers. Why is it, he asked, that this country, with an area about half as large as the United States and Alaska, with almost three times the population of the United States, such a poor producer and such a poor consumer as it is to-day ? With the gifts of Nature it possesses, with the industry and intelligence that its inhabitants are blessed with, and with the aid Great Britain can give them, cannot they, he asked, do better both as producers and as consumers ? Enquiries of the kind now he proposed, he said, would doubtless lead to practical action which might bring about the desired to the mutual benefit of England and India.

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Madras since the British Conquest—II.

By the Editor.

The Press of the period bears ample testimony to the change that was steadily coming over the Company's fortunes in India. The Company was shedding off its commercial aspects and becoming more and more a territorial power. In 1829, we hear that Lushington and his Council were putting into execution the Directors' orders that the Company should relinquish the factories on the East Coast—Vizagapatam, Ingeram, and Madapollam. The *India Gazette,* which published this item of news, feared that the withdrawal would be "to throw away thousands of weavers out of employment" and scouted the idea of finding a market for Indian goods in South America by quoting the opinion of "gentlemen lately arrived from the Western Coast of South America" that Indian cotton goods "have been almost entirely supplanted in that market by North American fabrics". In 1832, we note in the *Madras Gazette* an advertisement offering for sale the cloth factories at Ingeram and Madapollam, from which may be inferred that the cloth investment there ceased about that time.

Prolixity of Official Correspondence.

A general letter of some interest animadverts on the prolixity of official correspondence. Writing on the 10th of February 1830, the Directors observe as follows:—"The great length of many of your general letters and the number of subjects which they embrace, tend materially to retard our correspondence. To obviate this cause of delay, you are directed to instruct all your subordinate functionaries in the several departments, civil and military, as well in their correspondence with each other as with their respective Governments to write separate letters upon separate subjects, and on a paper annexed to each letter, to make a short abstract of its contents. This division of subjects may not be practicable to an equal extent in every department and in all cases, but it is desirable that it should be acted upon as far as circumstances will permit. The practice of making abstracts, besides facilitating reference, will lead, we hope, to a condensation of the correspondence, which is often most unnecessarily expanded. It should be understood throughout our service, that the letters which contain the most useful information and pertinent suggestions or instructions within the shortest compass, are the most valuable, and will be held by the superior authorities in the highest estimation."

Justice and Humanity.

The Court of Directors had a lively sense of justice and humanity. In a despatch dated February 17th, 1830, they animadverted on what they stigmatised as "unjustifiable lenity" of the sentence passed at a Court-martial on a coronet who had been within four years of his arrival in India four times brought to trial at Courts' martial, and twice sentenced to be dismissed from service, though subsequently on each occasion the sentence had been remitted. On more than one occasion, it had been proved, the Directors state, that "he had beaten and maltreated the natives in a most shameful and outrageous manner". The Commander-in-Chief did not concur in the "unjustifiable lenity of the sentence" passed by the presiding officer, but pending the order of the Honourable Court, he had been tried again at a fifth Court-martial and dismissed from service. The Court of Directors in agreeing with the Commander-in-Chief drew pointed attention to their military letter of the 14th April 1813, in which they wrote that they would—"Dismiss from

our service every officer who shall be proved to have been guilty of cruelty to any native, either by violently or illegally beating or otherwise maltreating him." They also ordered that coronet concerned "be discharged from our service and sent to England without delay". Sir George Walker, the Commander-in-Chief, in calling special attention of all the officers of the Madras Army to the decision of the Court of Directors, remarked in terms which deserve to be re-called even after the lapse of a century or so since they were uttered :—"His Excellency takes this opportunity of reminding officers, that *not even the unperfect judgment* of Court-martial will hereafter save them from due punishment, in the event of their mal-treatment of natives ; an offence equally to be deprecated as cruel with reference to the physical weakness of natives ; as ungentlemanly, considering the decorum of conduct which *should* characterize officers ; and as impolitic, recollecting the particular tenure of our Eastern Empire." Sir George added by way of an injunction: "Upon receipt of this order, officers commanding corps will immediately assemble the European officers under their command, and read it to them with such comment as the previous conduct of individual officers may, in their opinion, render necessary."

Military Events of the Period.

Among the military events of the period in which the Madras Army took part were the operations in the Doab, subject to the Bombay Presidency ; in quelling an insurrection in Tavoy, Burma ; in conducting the operations against the Raja of Goomsoor, in Ganjam ; and in putting down certain disturbances in Nagar, which ended eventually in the assumption of the administration of the Mysore State by the Company. As regards the first, which relate to 1830, the troops were placed under the entire disposal of the Bombay Government, which was responsible for its equipment and maintenance as if they continued in service at Fort St. George. The affair at Tavoy was apparently a serious affair and is thus referred to by the *Madras Gazette* dated December 30, 1829 :—In consequence of the outrages committed on the Company's territories by Burmans from Martaban, three companies of H. M. 45th Regiment under the command of Lieutenant Colonel Shaw, on the 8th ult., proceeded thither on board the *Diana* steamer with a flotilla of gun-boats. No opposition was offered to their landing ; the Burmans fled into the jungle, and thereby escaped falling into the hands of the British troops. Martaban, with some other villages, was entirely destroyed by fire ; this was accomplished by some Taliens, who accompanied the English. The Burmese authorities had refused to interfere, or to deliver up the marauders, which led to the expedition. It had the desired effect, for orders have been since issued by the principal authority at Rangoon for their immediate apprehension. The chiefs have been taken, and were to be delivered over to the authorities at Moulmein for execution.

Later reports showed that the insurrection was completely put down "by the prompt and judicious measures adopted by the late Captain Cuxton of the 19th Regiment N. I. and to the steady conduct of the detachment under his command, aided by the gallant services of Sub-Conductor Corley, Staff Sergeant Richardson, and Sub-Assistant Surgeon Bedford, who, in the absence of the artillery, manned and served the guns in the most spirited and effectual manner." The Rt. Honourable the Governor in Council regretted the death of "so valuable an officer as Captain Cuxton" and in recognition of their high approbation of the services of the whole detachment, forthwith promoted the "individuals who particularly distinguished themselves on that occasion".

Recalcitrant Goomsoor Raja.

The Goomsoor Raja, an old man of seventy, refused to hand over charge of his Estate to his son, as required by the Madras Government. Complying with the Collector's request, a field detachment from the 38th Regiment N. I. under the command of Major Cleveland, marched from Berhampore on the 21st September 1832, at twenty-two hours' notice, *en route* to Goomsoor, for the purpose of compelling the surrender of the Goomsoor territory by the Raja to his son, under the authority of Government. It was at first feared the Raja would defy Government, for he had, according to a correspondent of the *Madras Gazette* (October 21) "stockaded himself in Goomsoor, and stopped up all the approaches". On arrival of the detachment within 20 miles of his place, he became, it would appear, alarmed and gave himself up.

Mysore Affairs.

We now come to the last item, the disturbances in Nagar, which ended in the assumption of Mysore administration by the Honourable Company. The *John Bull* of Calcutta published an account, dated June 17, 1831, from a correspondent at "Chikamaglur"

(Chikmagalur), detailing the repulse on Watsara fort, about 10 miles west of that station. The *Madras Gazette* of October 19, 1831, reported the pending assumption of the State in the following paragraph :—"We believe it is in contemplation to relieve His Highness the Rajah of Mysore from the cares and anxieties of his Government : Commissioners have been or are about to be appointed by the Supreme Government to settle the Mysore country. The Rajah and the various members of his family will be handsomely provided for, for the stipend to be allowed to him will probably exceed the actual amount of his present income ; and it is expected that by good management the Mysore revenues will be greatly increased, whilst the interests and the happiness of the people will in general be better provided for than at present. It is said that Colonel Briggs, of the Madras Army, and Mr. C. M. Lushington, of the Madras Civil Service, have been or will be appointed to the Mysore Commission. That the Company did not assume the Government of Mysore at the time when Seringapatam was taken has long been a subject of regret ; under present circumstances, sound policy and strict justice not only warrant but imperatively call for this exercise of power. Protected by a British Government, we have no doubt the Mysoreans will prove a peaceable and an industrious race, and the capabilities of their country will soon be called into action on an extended scale. At present, a considerable part of this fine territory is waste land, whilst, we believe, almost every part of Mysore is capable of being made productive. Coffee, spices, sugar, cotton, indigo, corn, and most articles of agriculture, as well Asiatic as European, may be grown here in great perfection. If English subjects are allowed to colonize India, Mysore would be a fine country for them to commence with ; there is scarcely any part of India so favourable for the exercise of British skill and industry. The soil is capable of being made abundantly productive, whilst the climate of most parts of Mysore is favourable to Europeans. In the course of time we might expect that, with the aid of the stimulus and perseverance of Englishmen, attempts would successfully be made in clearing the country of the jungle, with which it, in some places, abounds, and which often produces fever and other diseases. If this were accomplished, a considerable quantity of land, which is now worse than useless, would be made available for almost every agricultural purpose."

Mr. C. M. Lushington, the Commissioner, discharged some of the irregular force and this gave occasion for some disturbances at Bangalore. A *Naique* of the 35th Regiment of N.I. was arraigned for sedition and insubordination, he being "concerned in placing the carcase of a pig, surmounted by a cross on the Edgah" on the eve "of the reading of the Khootbhah", in order to stir up the Mussulmans in attendance thereon to take up arms against the Company's Government", and was convicted and sentenced "to be shot to death by musketry, which sentence was carried into effect", we are told, "in presence of the troops, European and Native, paraded for the purpose". Later the *Madras Courier* (13th November 1832) announced that the Court of Inquiry found that "not a single Native Commissioned officer" was implicated in this affair, though "one or two non-Commissioned officers and twenty or thirty of the principal Conspirators" were in custody. "No doubt," it added, "is expressed of the reality of the plot." These were all subsequently tried and suitably punished—some shot by musketry and others "transported beyond the seas, for the terms of their natural lives". In a long general order, dated December 13, 1832, communicating to the Army the result of the investigation, His Excellency the Commander-in-Chief, Sir R.W. O'Callaghan remarked thus : "Not the breath of *suspicion* even has attached to any one of the native officers of the Army ; they have throughout this affair upheld their high and long established character for honour and fidelity."

Reorganization of Madras Police.

Chief among the important measures of domestic reform carried out by Lushington was the reorganization of the Madras Police in 1830. In February that year, he appointed, according to the *Madras Gazette* (February 17), a Committee to inquire "into the present state of the police at this presidency". The members included Henry Byrne, Chairman of the Quarter Session, Æneas Macdonell of the Board of Revenue, and Robert Eden, Sheriff of Madras. The Superintendent of Police, the Sitting Magistrate and the Coroner were directed to afford every assistance to the Committee to facilitate their work.

A couple of days later (February 20, 1830) the *Madras Gazette* stated that the Committee had been asked to report "within a month" unless they wanted more time, "which it is presumed," it added, "they will, considering the extent and object of their enquiries." That "beneficial results" were expected from this Committee is also hinted at by the *Gazette*. Just a

week before Lushington laid down his office of Governor (29th October 1832), the new police system was carried into effect, after being "duly registered (as required in those days) in the Supreme Court". The *Madras Gazette* of October 21, 1832 summarized the new scheme in a few words: "Instead of there being but one police-office, there are to be four; the presidency divided into four districts, the police-officers having jurisdiction in their respective Districts."

Matters Industrial.

In the industrial domain, interest to-day centres round Iron and Diamond mining, which figures in the Madras Press of Lushington's time. The Madras *Government Gazette* contains a regulation, the first of 1831, passed by the Governor in Council for granting to Josiah Marshall Heath, Esq., the exclusive privilege of erecting and using iron works on the European plan within the Presidency of Fort St. George until the end of the present charter. Mr. Heath belonged to the Madras Civil Service, and, it appears, had employed himself for many years and a considerable part of his fortune in an undertaking to introduce and establish such iron works in districts containing rich iron ores, "which have been hitherto altogether, or for the most part, neglected for want of adequate means of raising and working them. To enable and encourage him to prosecute this undertaking, and to secure to him a fair and reasonable remuneration for his risk, labour, and expenditure, the Governor in Council has deemed it proper to grant him a temporary monopoly of the manufacture."

The Madras *Government Gazette*, June 23, has the following:—"Having been on duty, the 16th June at the station of Porto Novo, I cannot refrain from bringing to your knowledge and information, the gratifying sight I experienced in witnessing the manufacture of the first cast-iron ever produced in India. Being present at what I termed the tapping of the furnace, I beheld in a moment a pure and liquid stream of cast-iron running like water. The European workmen as momentarily gave the hearty English huzza, in which I as heartily joined. This casting of iron weighed three hundred weight, of which I send you a sample with the cinder, which is pure glass. The new Indian iron furnace having now, so honourably to her founder, so well discharged her duty, I should observe, what is not less worthy of remark, that this cast-iron has been produced from it within one month from the foundation having been laid."

Re-burial of Sir Thomas Munro's Remains.

An event of interest which occurred during Lushington's Governorship was the re-burial of the remains of Sir Thomas Munro at St. Mary's Church, Madras. The following extracts speak for themselves:—

"The Right Honourable the Governor in Council having, in compliance with the wishes of the family of the late Major General Sir Thomas Munro, Baronet and K.C.B., directed the removal of his remains from Gooty for the purpose of being interred in St. Mary's Church in Fort St. George, is anxious that every mark of public veneration for his virtues and talents should be shown on this occasion. The ceremonial will be duly detailed when the remains, now on the road from Gooty, under the escort of the 5th Regiment of Native Infantry, shall approach the presidency. In the meantime the Right Honourable the Governor in Council takes this occasion of re-publishing the unanimous resolution of the Honourable Court of Directors, dated the 28th of November 1827, recording the Court's deep sense of the public benefits derived from the distinguished services of their late excellent Governor of Fort St. George."

"*Resolved Unanimously.*—That this Court has learnt, with feelings of the deepest concern, the decease of Major General Sir Thomas Munro, K.C.B., late Governor of Fort St. George, and its regret is peculiarly excited by the lamented event having occurred at a moment when that distinguished officer was on the point of returning to his native land in the enjoyment of his well-earned honours, after a long and valuable life which had been devoted to the interests of the Company and his country. That this Court cannot fail to bear in mind the zeal and devotion manifested by Sir Thomas Munro, in retaining charge of the Government of Madras, after he had intimated his wish to retire therefrom, and at a period when the political state of India rendered the discharge of the duties of that high and honourable station peculiarly arduous and important; and this Court desire to record this expression of its warmest regard for the memory of its late valuable servant, and to assure his surviving family, that it deeply sympathises in the grief which so unexpected an event must have occasioned to them."

Funeral of Sir Thomas Munro.

"On the 21st April, the remains of the late Sir Thomas Munro, which had been brought from

the Ceded Districts, were interred in St. Mary's Church, with military honours ; the Bishop of Calcutta (who had landed at Madras that day from Ceylon) read the funeral service. The Governor, and all the heads of departments, attended on the occasion. The following G.O. was published the preceding day :—

"The Right Hon'ble the Governor's body guard will proceed on Thursday morning to the river beyond the Female Asylum on the Poonamallee Road, and will regulate its march so as to arrive at daylight, when it will receive charge of the remains of the late Sir Thomas Munro, from Lieutenant Dunsmure, of the 8th Regiment, Light Cavalry, and escort them to St. Mary's Church."

The ball which was to have been given at the public rooms on the evening of the 21st, was postponed to the evening of the 26th instant, out of respect to the memory of Sir Thomas Munro.

The following, taken from the *Madras Gazette*, dated September 5, 1831, relates to the portrait of Sir Thomas Munro, by Archer Shee, which is to be seen at Government House, Madras :—"We feel a high gratification in being able to inform our readers of the arrival of the portrait which was ordered from England, of our late esteemed Governor Sir Thomas Munro, in the H.C.S. *Minerva*. We have not yet had an opportunity of viewing this welcome production of the powers of that distinguished artist Sir M.A. Shee, by whom the portrait has been painted, as the case in which it is contained will only be opened tomorrow. The Government have, we understand, given sanction for the pictures being placed in the College Hall, opposite to that of Lady Munro. The engravings of the likeness subscribed for in 1827 have also been received by the *Minerva*. We have one of them in our possession. The execution and style are beautiful and the resemblance to the lamented original strikingly correct : though we cannot, however, avoid excepting in a degree to the figure, which appears to us rather too stout."

Retrenchment in those Days.

Even in those far-off days Retrenchment was in the air. A number of posts—Barrack master at Bangalore, Deputy Judge Advocate-General of His Majesty's troops, the Persian interpreters to subsidiary forces—were done away with by an order issued on September 7, 1830. The post of Deputy Master Attendant at Madras was abolished in 1831 ; and a number of young Civil Servants, inefficient in the "native language", were, under orders of the Court, "returned to their friends in Europe" by the Governor-General, to use the quaint language of the *Madras Gazette* of November 17, 1832. It characterized the "return" as a "hard measure", though it added "but of course the service must submit to the Regulations of the powers that be".

Matters Military.

During the major part of Lushington's time, Sir George Walker was Commander-in-Chief of Madras. He was highly popular with the Madras Army, which he ruled wisely and well. Just in the enforcement of discipline, he was highly appreciative of talent, European or Indian. Deserving Indian soldiers always received merited advance at his hands. Numerous instances of his exalted attitude towards them can be mentioned from the papers of the day. On handing over charge, on May 11, 1831, he issued the following orders :—"His Excellency Lieutenant-General Sir R. W. O' Callaghan, K.C.B. having been nominated to the command of the army of Fort St. George, and having this day arrived to assume the command thereof, Sir George Walker cannot resign this important trust without expressing the satisfaction he feels in devolving it to such able hands. In closing his professional connection with the Madras Army, with which he has now been associated for so many years, not merely as its chief, but in the earlier part of his military career in a more subordinate capacity, he cannot take leave of it without offering his most sincere and heartfelt wishes for its future welfare and prosperity, and, though finally separated from it, he begs to assure its members that his best efforts will be individually exerted at all times to advance its interests."

His successor was Sir Roper William O'Callaghan, K.C.B., who, the *Madras Gazette* reported on May 19, 1831, "held his first levee at the Banquetting-room on the 18th May". In an Army Order dated May 12, he assured that "the claims of individuals of all ranks and classes founded on merit and services will be duly considered by the Commander-in-Chief, the more especially when supported by the favourable recommendations of Commanding officers."

Of curious interest is the following order dated December 4, 1829, issued by Sir George Walker :—"The Commander-in-Chief having with great disgust noticed a feminine practice

adopted by some officers of this service, of wearing combs in their hair, and dangling fancy curls, unbecoming of the appearance of a soldier, desires that this practice may be forthwith abolished, and a more male costume adopted."

The *Calcutta Courier*, dated June 27, 1832, published the following item :—"The Court of Directors have given their assent to a proposition for the establishment of military retiring funds, the Court sanction the principle as a general measure, for the three Presidencies, limiting the annual retirements on pensions, to twelve from Bengal, seven from Madras, and four from Bombay, and offering to hold the funds at 6 per cent interest, and to grant public bills for the pensions at 2 shillings per rupee—a boon equal perhaps to full 30 per cent, although it has not the ostentatious air of a donation."

Madras Supreme Court.

The Madras Supreme Court was, at the time, presided over by Sir Ralph Palmer, Sir Robert Comyn and Sir George W. Ricketts being Puisne judges. Sir George Ricketts had, according to the *Madras Gazette* of October 7, 1829, suffered "very much of late", "so much so, as it render it both advisable and necessary for him to try how far a sea-voyage may contribute towards his recovery". Sir Ralph Palmer, in announcing his death, in Court (October 19, 1831) said addressing the jury he was charging :—"He could not discharge the jury without expressing his deep regret at the severe loss which the Court and the society of Madras had sustained by the death of his late Colleague on the bench, Sir George W. Ricketts. In his professional character, the soundness of his judgment, the excellency of his principles, and the attention to his duties, in society, the warmth of his heart, the kindness of his disposition, and the urbanity of his manners, would make his memory universally cherished and esteemed, as a judge, a friend and a member of the Community. His Lordship added that it afforded some consolation to his friends in his native country, to know how much the deceased was respected, beloved, and esteemed by every branch of the society here."

Sir George, it would appear, died at sea. The *Courier* of September 13, 1831, wrote thus in announcing the event to his readers :—The hand of death has again fallen upon our high places, and removed from amongst us one to whom we were accustomed to look up. The recent arrivals from the Mauritius convey to us the melancholy intelligence of the death at sea, about the middle of July, of the Hon'ble Sir George William Ricketts, Kt., one of the puisne of the Supreme Court of Judicature here. Minute guns, corresponding with the age of the deceased, were fired from Fort St. George at sunrise on Sunday morning and the flag-staff was half struck until sunset. Sir George W. Ricketts, Kt., sailed from this in the ship *Frances Charlotte* at the end of June —we believe he was at that time very ill, having previously suffered much from indisposition. Of his character we know little : he was in that rank of life which elevated him above the level of common society, and precluded him from that free intercourse of sentiments from which truth is elicited. We have heard that he was always found an advocate on the side of human nature and human virtue ; recommending that line of conduct which springs from disinterestedness and a liberal feeling, and maintaining its practicability. In the defence of the widow and the fatherless, and him that has none to help, his exertions were zealous and animated. In a word, no one ever passed a more useful, few a more blameless life as his whole time was employed in doing or meditating to do good.

Dr. Harvey Fletcher, according to the *Forward*, has invented a mechanical device which stimulates the human voice and thus enables all mutes whose dumbness is due to a defective larynx to speak. Dr. J. E. Mackenty was the first to demonstrate the possibility of such a device. As a large proportion of mutes suffer from a defective larynx, the invention is of great value. Moreover, the invention promises to save the lives of persons whose larynxes may be removed by surgery. An operation for cancer of the throat, with the removal of the larynx, for instance, leaves the patient unable to breathe through the nose and it is often necessary to cut a hole in the neck which makes speech impossible. Over this hole is placed a pad, and from this a rubber tube leads to a device which agitates the vocal chords. Air forced from the lungs is set into vibration here, and these vibrations are carried through a short tube to the mouth. The speech differs from natural speech chiefly in being a monotone.

Land Mortgage Banks for Madras.

By the Editor.

Mr. J. Gray, I.C.S., Registrar of Co-operative Societies in Madras, deserves to be congratulated on the well-conceived scheme for the formation of Co-operative Land Mortgage Banks he has proposed for Madras. The scheme has been, except for one change, approved by the Madras Government and published for general information. Mr. Gray's report, which we consider below, includes a set of model bye-laws, which, on the whole, seem carefully worked out. They have been examined by the Advocate-General, Madras, and found to be in order, from a legal point of view. Since the idea of forming similar societies has been long in the air in the Mysore State, for some ten years or so, it would not be out of place to set down here the main features of Mr. Gray's scheme.

The primary object of Mr. Gray's scheme is to facilitate the redemption of mortgages of agricultural land and thereby to afford relief to ryots who are encumbered with mortgage debts. The experience obtained in the working of rural co-operative societies in this Presidency shows that these prior debts are a serious obstacle to the improvement of the ryot's economic condition and unless some satisfactory method of liquidating them is devised he cannot reap the full benefits of co-operation. He, therefore, proposes to include amongst the objects of the land mortgage banks the improvement of agricultural land and of methods of cultivation, but at the outset their operations will be directed chiefly towards the redemption of mortgages.

Existing rural co-operative societies depend mainly on co-operative district banks for their finance. These district banks, and the Provincial Bank on which they (or most of them) depend obtain the bulk of their working capital from loans and deposits for comparatively short periods. Existing co-operative societies are, therefore, unable except on a comparativly small scale, to advance money for the liquidation of prior debts which generally involves loans extending over a considerable number of years. It is to overcome this difficulty at least in part that the present scheme for the formation of land mortgage banks to obtain long-term money has been devised. All loans to members of the proposed land mortgage banks will be secured on the mortgage of agricultural land and the bulk of the working capital will be obtained by the issue of debentures secured on these mortgages. When the loans are given for the purpose of redeeming existing mortgages all previous encumbrances on the land mortgaged to the bank as security will be paid off. Loans will be given for the improvement of land or of methods of cultivation only on the mortgages of unencumbered agricultural land. All loans given by the bank will therefore be secured on first mortgages. As the debentures to be issued by the proposed land mortgage banks will be secured on these mortgages, it is hoped that they will eventually be taken up readily by the local investing public. The investor in the Madras Presidency much prefers lending on the security of immovable property to investing in the shares or debentures of joint stock companies. Although he is not accustomed to deal in debentures it is probable that he will be attracted by debentures secured on the mortgage of immovable property.

The method on which the proposed land mortgage banks will work is indicated in outline by Mr. Gray, in the model bye-laws he has framed. The idea is that a number of ryots who own landed property in a specified area and who have mortgaged land to money-lenders should combine to form a co-operative land mortgage bank. They will re-mortgage their lands to the bank which will proceed to issue debentures on the security of these mortgages. These debentures will be sold in the open market and the sale-proceeds will be utilized by the bank in lending to its members in exchange for their mortgage deeds. Debentures will be issued in different series, each series being intended to finance a different group of members. All the members who apply for loans about the same time will be regarded as forming one group and one series of debentures will be floated to finance that group. The debentures may be of various denominations, say, Rs. 1,000, Rs. 500, Rs. 250 Rs.100, Rs.50. The total value of the debentures issued in each series will not exceed the amount covered by the mortgages given by the members of the group for whom the series is issued. The period for which debentures will be issued will ordinarily be not less than 12 and not more than 20 years. Within these limits the period may vary from series to series. The maximum period for which the bank will lend to its members is 20 years. The period for which debentures will be issued has not been specified

in the draft model bye-laws, because it seems undesirable to tie the hands of the Directors in regard to this matter. The period will, of course, be specified in the trust deed to be created, when each series of debentures is issued.

The rate of interest to be paid on debentures will, for the present, be fixed at 7 per cent per annum. Debenture holders will not have the right to claim repayment of their debentures before the expiry of the fixed term for which they were issued, but the bank will reserve to itself the right to redeem any debenture before it matures on giving three months' notice. This provision will not ordinarily be enforced but it is necessary not only to meet the possibility of a general fall in the rate of interest in the money market (in which case the bank would redeem existing debentures and issue fresh debentures at a reduced rate of interest) but also to meet the possible difficulty of finding an outlet, in the form of fresh mortgage loans to members, for the money repaid by members from time to time.

The Board of Directors of the bank will appoint a Trustee whose function will be to see that the bank fulfils its obligations to the debenture holders. For each series of debentures there will be a separate trust deed although the Trustee will be one and the same person. In order that the Trustee may fulfil his duties, the mortgage deeds executed in favour of the bank by its borrowing members will have to be assigned to him. The bank will covenant with the Trustee to pay to the holder of every debenture the amount specified therein on the expiration of the fixed period or at such earlier time as the debenture may be redeemed in accordance with the bye-laws of the bank, and also to pay interest, at the rate agreed to the debenture holder every year until the date of redemption. All recoveries from the borrowing members of the bank on the mortgage deeds taken as security for loans will be paid to the Trustee and the bank will also covenant with the Trustee to advance from its own funds, in the event of default of payment of the mortgagors, the sum necessary to completely fulfil its obligations to the debenture holders. The powers of the Trustee are specified in the bye-laws. If the Trustee has to proceed against any of the mortgagors under the power conferred by the bye-laws, his expenses will be borne by the bank. The Trustee will, for the present, be the Registrar of Co-operative Societies or some one selected by him, but reservation has been made in the bye-laws of certain powers to the Registrar of Co-operative Societies as such apart from his powers as Trustee. The Trustee has merely to safeguard the interests of the debenture holders. The Registrar has to look to the efficient working of the bank as a whole. Mr. Gray proposes that the Assistant Registrar of the section in which the land mortgage bank is situated should be selected as Trustee. Later on it may be possible to select a non-official to take his place as Trustee.

All repayments by borrowing members of the bank on mortgage deeds which they have given as security to the bank will be handed over to the Trustee. The amount so realized towards principal may be utilized by the Directors with the sanction of the Registrar of Co-operative Societies and of the Trustee in giving fresh loans to members on the security of mortgages. The period for such loans must, of course, be so fixed that they will mature before the expiry of the period of the debentures. These further mortgages will also be assigned to the Trustee. When the collections towards principal handed over to the Trustee cannot immediately be utilized in further mortgage loans they will either be invested or will be utilized in paying off debentures. Collections cannot be used for the purpose of giving further loans for the full period of 20 years. For this purpose, fresh mortgages will have to be taken and a new series of debentures issued thereon, the mortgages being assigned in due course to the Trustee. The sale-proceeds of these debentures can then be utilized for further loans to members for 20 years. One of the bye-laws lays down that the total value of debentures actually in circulation at any time must not exceed the total value of the mortgage bonds and other assets assigned by the bank to the Trustee and held by him.

With regard to the area of operations of the proposed land mortgage banks, it was suggested by the Government of Madras that the taluk will be the most suitable unit for the present. Mr. Gray's own view is that the area should be much smaller and that the operations should be restricted to a group of villages within 6 or 7 miles from the headquarters of the bank. If the operations of a land mortgage bank are extended to such a large area as a taluk the identification and valuation of the land to be mortgaged to the bank by the borrowers will, he thinks, present considerable difficulty and will also involve a certain amount of expenditure. On the other hand, if the area is limited as suggested by him there will be no need for inspection and valuation by professional

experts. The members of the Board of Directors will know the land and will be able to value it with very little trouble and expense. It will be much safer, he thinks, to restrict the area of operations as suggested by himself. Some degree of mutual knowledge is necessary for the satisfactory working of a co-operative society even on the limited liability basis, and it will be difficult, he says, to obtain this if the members are drawn from so large an area as a taluk.

The question has been raised whether it would be necessary to amend the Co-operative Societies Act to enable the operations of a primary society of this kind to extend to a taluk. The suggestion has been made that section 6 (1) (*b*) of the Act would appear to cover the case as the members of the bank would be of the same occupation, *viz.*, agriculturists. But this might be regarded as straining the meaning of the section as many of the members may have other occupations. The simplest way out of the difficulty is for Government to issue an order under section 46 of the Act exempting land mortgage banks from the provisions in section 6 (1) of the Act. This will be necessary, Mr. Gray thinks, even if the operations are limited to the smaller area suggested by him.

The proposed land mortgage banks are to be organized on a limited liability basis. It may of course be argued that the adoption of unlimited liability would obviate the necessity for the collection of heavy share capital and would thereby make it easier to bring in the men whom it is intended to benefit. There are, however, insuperable practical difficulties in the way of organizing land mortgage banks on the unlimited liability basis in this Presidency. For these banks can only be started in areas where unlimited liability credit societies are already at work. The ryot must turn to the existing village society for his requirements in the way of short term loans. The proposed land mortgage banks are only to give long term loans. No person can be a member of two unlimited liability societies at the same time and so the new land mortgage banks must necessarily be on the limited liability basis. In order to legalize the registration of the proposed land mortgage banks as co-operative societies on the limited liability basis, it is necessary that the Local Government should issue a special or general order under the proviso to section 4 of the Co-operative Societies Act, 1912.

The maximum rate of interest to be allowed on deposits is fixed at 6½ per cent per annum which is the rate allowed by central banks on long term deposits. Land mortgage banks should not, however, go in for deposits to any great extent, as the whole object of the scheme would be defeated if such deposits formed more than a small proportion of their total working capital. If such deposits can safely be utilized for the grant of loans for periods of 16 to 20 years there would seem to be no necessity for the formation of separate land mortgage banks. Mr. Gray does not of course mean that there is no necessity for provision in the bye-laws of land mortgage banks for taking deposits ; but such deposits should not be taken in simply as a matter of course. It may occasionally be necessary to take in deposits to meet the possibility of default in repayments by borrowers so that the bank may be able to keep up its engagements with its debenture holders.

It is proposed for the present to restrict the amount which can be lent to a member to a maximum of Rs. 1,000 as the object of the scheme is to relieve the smaller debtors. The rate of interest is fixed at 9 per cent per annum. In regard to the system of repayment Mr. Gray is strongly of opinon that members should be given the option either to repay the principal in equal annual instalments with interest due on the outstanding amount or to adopt the system of equated payments including both principal and interest. It may be argued that the ordinary ryot is not conversant with the equated payment system but the fact remains that he is accustomed to it in connexion with takkavi loans. An option similar to that now advocated has been allowed in the case of co-operative building societies financed by Government and several building societies have deliberately chosen the equated payment system. The equated payment system has certain special advantages in the case of loans intended for redemption of mortgages or improvement of land. Loans for such purposes should be repaid out of the net income derived from the land to be redeemed or to be improved. For this reason it has been laid down in one of the bye-laws that no loan shall exceed three-fourths of the estimated net income for the period of the loan, derived from the land mortgaged as security for the loan. The proportion of three-fourths has been adopted to allow for a margin of error in the estimation of the net income. The net income from land redeemed by means of a loan from the bank will ordinarily remain fairly constant throughout

the period of the loan while the net income from land improved by means of such a loan will increase as the result of the application of the loan. It is therefore an advantage, when repayments are to come out of an income which is either fairly constant or is steadily increasing, that the annual demand towards both principal and interest should be a fixed sum (as it is under the equated payment system) rather than a larger sum in the first year with a steady decrease from year to year till the loan is cleared. Some of the co-operators who are most enthusiastic about co-operative land mortgage banks are strongly in favour of the system of equated payment and Mr. Gray sees no reason why they should not be allowed the option. Under one of the bye-laws the Board of Directors have power to call up loans before the due date whenever it seems necessary for the protection of the bank. Another provides that no less than 25 per cent of the annual net profits of the bank shall be carried to the Reserve Fund. This minimum seems sufficient. The question has been raised whether the proposed transfer to the Trustee by the bank of its rights in the mortgages which it takes as security for loans, will be valid. A similar question was raised in connexion with the debenture scheme ; but the Advocate-General has expressed the opinion that the transfer to the Trustee gives him a valid title.

In order to get over the difficulty of obtaining the required long-term money in the early and experimental stages of land mortgage banks Mr. Gray suggested that Government should guarantee the debentures issued by such banks. He suggested that the guarantee should be in the form of an undertaking by Government to purchase sufficient debenture bonds to make up the amount required for starting land mortgage banks, if private individuals and co-operative societies other than the land mortgage banks fail to take up the full number required. The ordinary investor in the Madras Presidency is not yet accustomed to the idea of investing money in debentures and in order to create confidence and to induce the public to take up the debentures of land mortgage banks, it seems necessary that Government should give a lead. It is not, of course, proposed that Government financial assistance should be a permanent feature of these banks or that Government should under-write a second or any subsequent issue of debentures by any such bank. But co-operators, both non-official and official, who have been consulted regarding the scheme were almost unanimously of opinion that, however sound the proposed land mortgage banks may be, it would be extremely difficult to induce the public to take up the debentures if the proposed Government assistance is conditional on half the required amount being taken up *first* by the public. They urged and Mr. Gray agreed with them, that in order to inspire public confidence in the debentures of these new banks, the lead must come from Government. If after Government has given such a lead, the debentures of the new land mortgage banks do not become sufficiently popular to enable the banks to develop without further financial assistance from Government, the scheme would have to be written down as a failure. If, on the other hand, these debentures do become popular, further financial assistance from Government would be unnecessary. For, the success of the three or four banks which it is now proposed to start as an experimental measure would, Mr. Gray anticipates, lead to the formation of other similar land mortgage banks which would be able to raise the money they require by the sale of debentures to the public without any Government guarantee. He, therefore, suggested that attempts should be made to start land mortgage banks on the lines suggested by him in three or four selected areas where conditions are most favourable. The banks would be registered as soon as the necessary share capital was forthcoming and suitable applications for loans had been received in sufficient numbers to justify the floatation of debentures for not less than Rs. 50,000 in the case of each bank. Debentures for the required amount would then be issued and every possible effort would be made to sell them to the public but Government should agree to take up all debentures which have not been taken up by the public within a reasonable fixed period, say three to four months, after the date of issue. It is on this single point that the Madras Government are unable to accept the recommendation of Mr. Gray. Their previous decision therefore stands, *viz.*, that the Government will be prepared to take up half the debentures to the extent of two lakhs only if at least half the debentures to the value of two lakhs are taken up by the general public.

With regard to the security for the Government money invested in debentures, all debentures, whether held by Government or by the public, could, Mr. Gray states, be amply secured on first mortgages of agricultural land. Bye-law 19 provides that the total value of debentures actually in circulation at any time must not exceed the total value of the mortgage bonds and other assets assigned by

the bank to the Trustee and held by him. Bye-law 51 requires that the land mortgaged to the bank as security for a loan shall have no prior encumbrances save the mortgage or mortgages to be redeemed by the loan given by the bank and also prohibits any subsequent encumbrances except in favour of the bank. Under bye-law 49, the value of the land mortgaged as security for a loan must be at least twice the amount of the loan. Again the bank has the right under bye-law 50 to require a borrower to mortgage all his other immovable property or to give two reliable personal sureties, so that even if the mortgagor defaults in the payment of his loan and the mortgage is foreclosed there will always be an ample margin to cover any mistakes in valuation of the land and to secure payment of interest as well as the principal due. As payments are made on the mortgages assigned to the Trustee, whether towards principal or interest, the sums recovered will be made over to the Trustee and as the value of the original mortgages diminishes progressively on account of repayments thereon there will be a corresponding increase in the other assets held by the Trustee in the shape of cash, and other liquid assets, fresh mortgage deeds obtained as security for further loans to members and other securities. Although the debentures held by Government will bear a lower rate of interest than debentures taken up by the public (Bye-law 17), no additional security will be offered to Government. As already indicated, the security for all debentures is extremely good; indeed unless there is some abnormal calamity involving the permanent destruction of the lands mortgaged to the bank, there can be no ultimate loss to the debenture holders. Not only is there no need for any additional security for the Government money invested in debentures over and above the security for the money invested by other debenture holders, but any proposal for such additional security would, by creating distrust in prospective purchasers of debentures, defeat the very object for which Government assistance is invoked.

Precise information is not available as to the extent to which the public are likely to take up debentures but there will apparently be little difficulty in selling debentures if land mortgage banks are started in suitable centres.

Tho following statistics covering foreign trade of the United States will prove of interest:—

EXPORTS AND IMPORTS.

Total exports from the United States, March, 1925	$ 445,533,000
Total imports into the United States, March, 1925	$ 385,488,000
Excess of exports over imports ..	$ 60,045,000

Trade with India.

Exports to India from United States, March, 1925	$ 3,986,000
Imports from India to United States, March, 1925	$ 12,673,000
Excess of imports over exports ..	$ 8,687,000

Some of the more important items exported from the United States to India during the month were as follows:—

Canned milk	1,000 lbs.
Canned fish	50,000 lbs.
Rubber tyres, tubes and casings..	3,000 pcs.
Kerosene oil	11,660,000 gals.
Lubricating oil	1,168,000 gals.
Iron and steel (wire, nails, bolts, pipes, sheets)	10,872,000 lbs.
Machinery, valued at ..	$480,000
Dyes	190,000 lbs.
Automobiles and trucks ..	357 pcs.

Trade with Ceylon.

Exports to Ceylon from United States, March 1925	$ 236,000
Imports from Ceylon to United States, March, 1925	$2,274,000
Excess of imports over exports ..	$2,038,000

Among the items exported from the United States to Ceylon during the month were included:

Automobiles and trucks ..	160 pcs.

Among the items imported to the United States from Ceylon during the month were included:

Tea	1,748,000 lbs.
Rubber	42,765,000 lbs.

India has, of late, been drawing considerable attention from U.S.A. merchants and manufacturers, particularly the Bureau of Foreign and Domestic Commerce whose business it seems to be to stimulate U.S.A. export trade. There has been, in fact, a large increase in the trade between the two countries. The report on the Indian Market of the Department of Commerce, Washington, points out, exports from India to the United States were in 1924, 54% greater in value than in 1913-14; and imports into India from U.S.A. were 168% greater than in 1913-14. In India's export trade the share of U.S.A. has grown from 7.6% in 1909-1913 (average) to 9.6% in 1923-24, and in the import trade the share has risen from 3.4% to 5.6%. Naturally U.S.A. merchants are out to explore the possibilities of the Indian market, and have found here the "richest return of all the great undeveloped markets of the world".

American Inflation and Its Relation to Europe.

By Virgil Jordan.

From the economic point of view these are critical days in the United States. There is good reason to believe that the inflationary movement which began in the stock market immediately after the election at the beginning of November will be the forerunner of a general inflation, unless the business community awakens to the danger and drastic measures are taken to avoid it. Instead of a gradual recovery from the stagnation of the past year and the development of a healthy level of business, it seems as if the country were destined to experience again one of those periods of reckless and artificial expansion which in the past have invariably brought the penalty of swift and devastating depression. This, at least, is the fear that is being expressed by some of the most conservative observers of current conditions, although there are many who are inclined to minimize the danger and who deprecate any expression of pessimism.

It was expected that a favourable outcome of the elections—that is, a maintenance of the *status quo* in Washington, and a general victory for the more conservative party—would be encouraging to business, which had been waiting for such reassurance. A gradual expansion of trade and resumption of industrial activity would have been natural after so many months of hesitation and caution. The immediate result, however, was quite different and far beyond expectations in its extent. Confidence expressed itself in a tremendous speculative activity in the securities market, which rose in successive weeks to unprecedented heights. Stock transactions reached record levels of over two million shares per day, and securities prices were driven also to higher points than were ever reached before in market history.

It was some weeks before this tendency was reflected in commodity markets, but prices have now begun to move upward rather sharply and with all signs of a speculative movement, too. There has been, however, little or nothing in the general trade and industrial situation to justify these movements. Business is expanding only to the extent that the usual seasonal factors would warrant; and industrial activity and employment are improving very slowly and gradually. The increase of over three billions of dollars in security values in the past few weeks anticipates a tremendous increase in industrial activity and earnings, and the rapid increase in commodity prices anticipates a great increase in purchasing power and consumers' demand, both of which seem to have no warrant in fundamental economic conditions in the United States to-day. The inflationary movement is based solely on the easy money market which has resulted from the vast accumulation of idle funds in the past few years. The "boom" so far is purely a money boom, which has its sources in the quick transformation of the United States from a debtor to a creditor nation since the war, and in the disruption of normal foreign trade currents.

There are two features of this situation which are of significance from the European point of view. The first is the relation of the American banking system to such tendencies as are now evident in this country. Although the idea of a controlled currency has only reached the stage of discussion in England, it may be safe to venture the prophecy that Europe has entered on a period of experimentation with centralized banking systems and currency control, largely as a result of the institution of the Dawes plan and the exigencies of the financial situation since the war. How far this will go it is impossible to venture; but it is likely that all these countries will look to the American experience with the Federal Reserve system for enlightenment.

One of the primary purposes of the Federal Reserve system was to provide a brake to check such runaway tendencies as are now evident in the situation in the United States, through control of the discount rate by the Federal Reserve Board and through the purchases or sales of securities or commercial paper by the member banks in the open market. The Federal Reserve banks have never before had such an excellent opportunity to demonstrate what this system could or could not accomplish in these directions as it has to-day. They have been partly responsible for the situation through the policy which they have followed of using their idle funds during the past year for the purchase of government securities and commercial paper in the open market. In this way they have injected more than a billion dollars of surplus funds

into the market, and this money has facilitated the speculation that has been going on during the past few weeks. The Federal Reserve Board, moreover, has several times lowered the discount rate in the past year.

By prompt action in selling the securities they have bought, by entering the foreign field for commercial loans, and by prompt action in raising the discount rate, the Federal Reserve System could exercise a strong restraining influence on the rapid inflation that is under way. Why is such action not taken? There are several reasons. One is that the Federal Reserve Banks feel themselves under an obligation to show profits, and they have put this obligation above that of regulating the business machine. A more important reason is that the action of the Federal Reserve Board is inevitably influenced by political considerations. The Federal Reserve discount rate has become a political issue. The present Administration favours low discount rates, and the two previous Administrations did likewise. Appointments to the Federal Reserve Board have always been made in the light of such considerations, and there is some evidence that the depression of 1920–21, which was a panic in all respects except bank failures, was not entirely uninfluenced by them. At any rate, in view of the force of agricultural opinion in American politics to-day, the Federal Reserve Board is hesitant to raise discount rates, and will probably not do so until the action is too late to be effective. All these things should be of interest to foreign countries which may engage in experiments in currency control through central banking systems.

A second feature of the situation which is of perhaps greater significance to European countries is the bearing it may have on foreign trade and American tariff policy. If the current inflationary movement continues American prices may be lifted to such heights that foreign manufacturers can profitably climb into American markets over the tariff barrier. There is already a tremendous pressure from Europe to get into American markets, and American industries are already beginning to feel foreign competition. If American prices go higher, the disparities of European exchange will be diminished, the invitation to imports will be stronger, and the competition of foreign goods will be more severe. There will be a tendency to deflate American prices not only because of the inadequate buying and consuming power of the American market but because of the successful competition of the foreign goods at lower prices. This situation is only too certain to bring with it in turn an outcry for a higher tariff, and under present political conditions such a demand is likely to be granted. If so, the European countries who have hoped to relieve themselves of some of their burden of debt to the United States through exports will again be faced with a new obstacle. The inflationary movement in America may in this way have a serious effect on European restoration. It may put unforeseen hindrances in the way of the smooth operation of the Dawes plan, and it may make impossible an early and satisfactory adjustment of the problem of the inter-ally debts.

This is another reason why Europe may well be interested in the proper functioning of the American Federal Reserve System. This remarkable banking system of the United States may play a most important part indirectly and directly in the restoration and maintenance of European stability to-day if it carries out its task of regulating American business wisely and far-sightedly. But this task cannot be performed with one eye on the political weathervane.

Education in Britain.

By Cyril Norwood. *

Education is a public service which perhaps more than any other has suffered from the war. During the war itself many of the boys' schools fell perilously near the line of inefficiency, and many of the strongest personalities among the teachers, with whom lay great promise for the future, were sacrificed on the battlefield. Their sacrifice was not in vain, but the vigorous influence of these men, who would now have been in the middle-thirties, is sadly missed to-day. The war, on the other hand, did good service in converting the nation to a greater sense of the need of education, and bred the idealism which launched the Fisher Act. There were high hopes

* With acknowledgments to the *Weekly Westminster*.

in those days. But the results of the war, the burden of debt, and the restriction of credit, acted as a killing frost on the luxuriant plans of educationists, so that a much soberer mood prevails to-day. It is some comfort to reflect that vigorous pruning often results in stronger growth, and that there are signs of this to-day.

It may well be that future generations will consider that the most productive labours of the post-war period were done in the medical work in the schools, and that the foundations of sound national hygiene were then laid. The reports of Sir George Newman indicate not only the extent of our present deficiency, but they record a great volume of remedial work.

The Health of School Children.

For instance, in 1923 it was found that probably more than two-thirds of the school population was suffering from dental disease, but it was recorded that in Cambridge, where there had been annual inspections for many years, and the necessary remedies applied, among 4,923 children in the schools there were only fifty-nine diseased teeth. Similar, if not quite such striking, results follow regular treatment of defects of the nose and throat, just as a comprehensive orthopædic scheme applied thoroughly for a few years would greatly reduce the need for "crippled schools".

Allied with this, and in part arising from it, is the demand for newer and better school-buildings : the need for light and air has been discovered, and the new school-buildings of to-day provide them. North Wingfield School in Derbyshire was indeed built before the war, but it has been the model for a good many since, and, it is to be hoped, of more to come. These schools, and they are to be found now not only in Derbyshire, but in Liverpool, Preston, Torquay, Swindon, and elsewhere, are lit from above by sky-lights, and ventilated by glazed doors running the full length of opposite sides of the class-rooms, and opening on covered verandahs. The children live and work virtually in the open air : in the country they look out on a garden. If this type of school can replace the cramped, insanitary quarters which do duty as rural schools, and the gaunt, asphalt-girt barracks of our cities, a great advance will be made towards the building up of a healthier population, and it will be due to the medical officers, teachers, and architects of the present time.

Teaching Self-Reliance.

A change, too, has come over the spirit of the teaching. It began with the century, but it has grown in strength and self-confidence since the war. Briefly, it lies in doing away with restraints, and in every way fostering the self-development and the self-reliance of the pupil. A wit has said that the change has been best marked by the Greek grammars. In the nineteenth century the schoolboy learned "tupto", I beat, through all its moods and tenses, though the verb was as a matter of fact not used by the Greeks ; to-day he substitutes for it "luo", I loose. The old pedagogue said that it does not matter what a child learns, so long as it is hard, and he is made to do it : the new says that it must be made easy because it must always be the thing which the child wants to do. Hence has arisen a great flood of experiment which extends to-day right through every stage of education.

It begins with the nursery schools which both in this country and abroad are full of promise, especially for the children whose homes are in slums and mean streets. They offer amusement, games, healthy occupation, in surroundings as jolly as possible. The chief inspiration has come from the research of Dr. Montessori, who after many years of patient inquiry has worked out what he holds to be the most favourable environment in which children can learn, and grow strong in mind, body, and spirit, without the loss of their natural joyousness. Her method is all for freedom in so far as children can choose their own subjects, but she prescribes with some rigidity the methods and apparatus which are to be used. She has had a profound influence in making all those, whose duty is to train the early years of childhood, question their own methods and seek for improvement.

The same principle extended to later stages appears in the "Dalton" plan, which has been applied to a few elementary schools, and to a larger number of secondary schools. It is unlike the Montessori system in that a free choice of subjects is not allowed, but there is considerable freedom both for teachers and taught in the use of methods. Each child usually completes his "assignments", *i.e.*, makes certain definite progress, in all his subjects, each month, but he does it to a large extent in his own time and in his own way. The teacher co-operates, but does not drive. The ideal is to make instruction in class entirely subordinate to self-instruction, and it is claimed that it introduces into the schools a new interest and a new spirit.

Self-Government Experiment.

The same movement comes out again in

experiments at self-government by forms and by whole schools. It often runs into extravagances, and it suffers from the exuberance, and at times the lack of humour, of its own devotees. But it is a salutary protest against the pedantry and the drill-ground methods into which the old school too often sank with content, and its results are bound to be better than those of teachers who wrestle with large classes by methods of routine. Whether they will be better than those of teachers who know how to inspire a class of reasonable size and level attainment under that normal discipline which is never indeed felt as such where the class has caught the teacher's enthusiasm, remains to be seen. Indeed, the danger of the whole modern movement is its tendency to forget the saying of an educationist as old and as neglected as Hesiod, that "in front of excellence the gods have set sweat". The critics complain that in the modern classes the pupils do not know how to "sweat", that privilege is reserved for their teachers.

The same insistence on the study of the individual, as an individual, and never as one of a mass, comes from the side of psychology also, and here much work of value is being done. Psycho-analysis indeed is entirely a method for the rare expert, and its proper subjects are not the normal, but the highly abnormal, children: but, putting that aside, psychology has done much already, and will do more, to clarify method, and to attach the right teaching to the appropriate years. In one particular respect, the discovery of intelligence by short and formal tests, the pioneer inquiries have been chiefly prosecuted in America, though the movement began here. The recent report of the Consultative Committee on "Psychological Tests of Educable Capacity" goes to show indeed that no method has yet been elaborated which will enable teachers to dispense with the time-honoured methods of the oral interview and the written examination, but that a valuable instrument has been discovered for measuring general intelligence in the early years of school life.

The Need of Aesthetic Training.

Perhaps more important is the greater emphasis now laid with increasing general consent on the need for a fuller æsthetic training. It comes out in the reform of physical training, in the growth of Eurythmics, in simple folk-dancing and drama, and in particular in the increasing confidence with which a place is demanded, and conceded, for Music and Art as full equals of Language or Mathematics or Science in the secondary curriculum. There are schools already in which Music has been made the basis of the most advanced school education, though of course only for those specially gifted, and it will be interesting to see how far the movement will be carried. There are many true friends of Music and Art who fear that if these subjects are forced on the schools, as matter for regular examination, the result will not be more musicians and artists, but only more music and art teachers. There are others who hope that by better work in the schools, the whole level of æsthetic appreciation in the nation will be raised.

In speaking of new movements there is danger of neglecting two very solid pieces of work which stand to the credit of the post-war generation. The first is the production of the four great reports on Classics, Modern Languages, Science, and English, which represent the educational mind of the period on the chief branches of school work, and must be the starting-point for future developments. The report on English in particular may well be the basis of a new conception of elementary education, and indeed of secondary too. The other is the perfection since the war of the great examination system for secondary schools, the School Certificates awarded to pupils just over sixteen, and the Higher Certificates awarded two years later. It is perhaps likely to be the most lasting of the achievements since the war, and its effects are profound. But it would require an article to itself, and can here only be mentioned: it is perhaps as responsible as such a system can be to the needs of a national education which at the present moment is full of unrest and experiment, and that discontent which is making for better things.

Trade Outlook.

The Federation of British Industries issues the following forecast of business conditions in the first quarter of 1925:—"A general expansion of trade should begin during the present quarter, though nothing spectacular is anticipated. The significance of the coming movement lies in the fact that, unlike previous movements during the past three years, which have been confined principally to the home trade of one or more countries, it should prove to be world-wide in scope and the prelude to the much-needed revival in foreign trade."

Industries in the Central Provinces, 1924.

The Report on the working of the Department of Industries of the Central Provinces and Berar for the year ending the 31stDecember, 1924, states that the most important piece of business transacted by the Advisory Board of Industries was the preparation of a bill for the provision of State aid to industries.

The emporium for products of village industries which is housed in the Museum contains samples of indigenous products which are collected by theCommercial Agent during his tours. Once the introduction between the seller and buyer has been effected, further purchases are usually made without any intermediary. The results of the emporium are, therefore, to a certain extent cumulative. During the year articles valued at Rs. 3,800 were sold as against Rs. 4,000 in the previous year. This slight falling off is partly to be ascribed to lack of space. It is reported that partly as a result of the business introduced by the Museum, the *kosa* cloth from Bilaspur and Raigarh, handkerchiefs from Burhanpur, toys from Saugor and brass and bell metal articles from various centres could not be supplied in time to satisfy the increased demand. The Leather Expert was appointed as Chief Inspector of Factories on the 2nd April, 1924, in addition to his duties as Inspector of Factories and continued to work in those capacities during the whole of the year. The tanning school is almost ready, and provision has been made for the commencing of operations in the budget of the ensuing year.

The decision of the Government of India to discontinue the publication of statistics of internal trade has, we note, caused considerable delay in the preparation of provincial statistics which are now only available up to the end of the year 1923. The necessary information for subsequent periods has now been received from the railway companies concerned and is in course of compilation. For that period the total value of exports was Rs. 1,949 lakhs of which two-thirds consisted of raw cotton. The principal imported articles were : manufactured cotton (157 lakhs), metals (138 lakhs) and sugar (135 lakhs), out of a total of 1,121 lakhs. During the 1923-24 season 1,212,239 carts of raw cotton, which is the principal article of export of the province, arrived in the cotton markets as against 1,187,217 in the previous year. The improved fly shuttle sley introduced by the Textile Expert is increasing in popularity with the weaving community. New ground has been broken at twenty-six centres where demonstrations have been given. The number of sleys sold during the year is 2,226 including 1,000 estimated to have been made by local carpenters ; and the total number of sleys introduced inthe province since the year 1915 is 14,668 which includes 4,310 sleys made and sold independently by local carpenters. The fact that these sleys are now being made locally is a very encouraging feature indicating as it does that the improved sleys are a sound economic proposition. In addition, one hundred double-box sleys were sold to the weavers, while fifty have been supplied to the Bombay Presidency. The improved warping machine which was introduced last year is gaining ground. Sixty-nine machines have already been sold, thirty during the present year. As no less than twenty-five of these were copied locally from the machines supplied by Government, it is evident that the model is one that is well adapted to local requirements.

In the year 1917 the Director asked the Titagarh Paper Mills to investigate the possibility of the manufacture of paper from cotton stalks. The experiments were delayed owing to the sinking by enemy action of the ship on which the necessary machinery was being imported in the year 1918. The experiments have now been concluded at the Forest Research Institute, Dehra Dun, by means of the special paper plant installed in 1923, and the final report was received from the institute in August last. It shows that paper of fair quality can be manufactured from cotton stalks, but that owing to the low yield of bleached pulp which is 10 per cent less than an economic proposition should show, it is unlikely that the operation would prove a commercial success in India, at any rate until the supply of bamboos and certain kinds of grasses is exhausted. The present condition of the paper trade in India makes it unwise to sink money into a project of this nature. It is regretted that the results of this interesting experiment have been of so negative a nature.

When someone stops advertising—someone stops buying ; When someone stops buying—someone stops selling ; When someone stops selling—someone stops making ; When someone stops making—someone stops earning ; When someone stops earning—everyone stops buying.—"Jabs" in *Canadian Textile Journal.*

Japanese Duties and Rebates on Cotton.

While the Press has been giving prominence to the position of Japan in the agitation over the Indian Excise Duty on cotton, Mr. T. Tamagaki, Agent of the Japan Cotton Spinners' Association, has communicated to the papers a letter explaining the conditions as to protection and rebates in Japan, in which, *inter alia*, he says :—

"Some speak of the protective policy of the Japanese Government, and in the Indian and British magazines and newspapers it is often alleged that the Japanese goods secured new markets through its strong protection. But, so far as the cotton industry is concerned, its growth has been entirely due to the private initiative and co-operative endeavours of the spinners in Japan, and the Government protection had nothing to do with the present development. As we regret that there is a surprising misunderstanding on this point, we should explain briefly on this matter.

"As regards the duties imposed by the Japanese Government, it should be remembered that the present import duty on cotton yarn under 20 counts is Yen 5.80 per 100 Kin (*ad valorem*, 5 per cent at present rate) and that above 20 counts is nearly the same. As to the duty on piece-goods generally speaking, this also comes to the same level. Thus it will be seen that the present import duty on cotton goods in Japan is not so high as compared with that of foreign countries.

"'The Japan Cotton Spinners' Association' is a private institution of the mill-owners and cotton merchants, organized in 1882 for the purpose of developing the cotton industry by mutual aid and protection. The organization went through several changes of improving the technical skill and the financial status of the industry. It was in no sense connected with the Government nor received any protection from the Government.

"No statement is further from the truth than the statement that the Japanese spinners are receiving Government bounty. Some time ago the Association granted an allowance on some kinds of cotton yarns and goods exported. But this was entirely different in nature from the bounty that the Government of a protectionist country sometimes grants on some goods to encourage its exportation. The allowance in question was nothing more than a means of mutual aid instituted among the spinners themselves with their own funds to help themselves over the difficulty caused by the industrial depression. It was granted only intermittently, and even in this case, the system of allowances was maintained only while it was absolutely necessary for the self-preservation of the industry and was discontinued some years ago. It is true that the Association asked for Government bounty in 1898 for the exported cotton manufactures, but the Government simply declined. The situation was as follows : there was a financial crisis in Shanghai in the preceding year which paralyzed the whole business, and there was practically no demand for Japanese cotton yarn. On the other hand, Japan had just emerged from a victorious war which gave an impetus to various industries, and especially to the cotton industry. And when the crisis came, the spinners found themselves in great difficulty with the undemanded stocks produced in the improved and expanded mills. Hereupon the spinners consulted and discussed an allowance to encourage export, but could not come to an agreement. As a last means, the Association asked for the Government bounty, which, however, the authorities did not grant.

"In the Spring of 1902 the price of silver began to fall and the rate of exchange on China rose enormously which practically stopped the trade with China. This again placed the spinners in a very critical situation. The spinners, therefore, reduced the working hours on the one hand, and, on the other, succeeded this time in persuading the members of the Association to adopt the system of granting allowances on exported goods. This measure was absolutely necessary at that time to help us over the most hazardous situation. Thus only during the two months of September and October, 1902, an allowance of Y. 3.00 per bale of the yarn under 20 counts, and Y. 1.10 per 300 pounds of certain kinds of cotton piece-goods was granted, which was defrayed from the rebates on the freight on the raw cotton from India. On this latter phase we will have an occasion to speak anon.

"Later, in 1908, when the business of depression set in as the reaction of the "post-war business boom" that followed the conclusion of the Russo-Japanese War, the Association granted an allowance to cotton manufactures exported to China from March to December, 1908, in the form of a coupon, while an allowance

of Y. 0.75 per bale was given on the goods exported to other countries, beginning from May, 1908. Again, from January 1909 to March 1912, an allowance of Y. 1.50 per bale of cotton yarn under 20 counts was granted. On the other kinds of yarns the allowance varied from Y. 2.00 to Y. 5.00 according to the requirements. As to the cotton piece-goods, an allowance of Y. 1.00 per bale of cloth of more than 28 inches width, and Y. 0.75 per bale of narrower cloth was granted from October, 1919. Thus the history of allowances has come to end before the Great War.

" As the story will show, the system of allowances was instituted with no outside help in encouragement ; it is purely and simply a means of mutual aid among the mill-owners to secure themselves against business emergency. The mill-owners have all to contribute to the Allowance Fund and the interests of mill-owners are not always identical ; for some mills chiefly produce the goods meant for exportation, while others put more emphasis on the production of the goods consumed in the home markets. It was natural that the granting of allowances could not be easily resorted to. And even when allowances were decided to be given, they have never exceeded two per cent of the value of the goods and never outlived the strictly necessary duration of preserving the life of the industry.

"Regarding the subsidy to the Bombay line of the Japanese shipping companies which was strongly criticised as unfair Japanese competition, it was granted in 1896 for the sole purpose of facilitating communications between India and Japan and not as a source of indirect protection to the cotton goods exported from Japan. This subsidy, however, has ceased to be given since 1906, and at present no shipping company to the Bombay line receives such subsidy.

"Some may look with suspicion at the rebates on the freight of raw cotton shipped from Bombay that the Association gives to its members. But there is no Government protection of any trick in it. Our members make contracts through this Association with the steamship companies for the conveyance of raw cotton bought in India. As the result of large shipments the Association gets rebates from the steamship companies. The Association in turn distributes the rebates among its members according to the quantity of cotton imported by them. Thus Indian cotton is imported to Japan so much cheaper, and accordingly increases the demand for Indian cotton, thus giving benefit to the Indian cotton growers as well as to the Japanese spinners.

"This system of rebates was inaugurated in the following manner : When the Japanese spinners tried to import raw cotton from Bombay, the oversea carriage of cargoes from Bombay was in the monopolistic hands of the Peninsular and Oriental Steam Navigation Co. subsidized by the British Government. The high rate of freight hampered not a little the possibility of using Bombay cotton in Japan. The endeavour of Viscount Shibusawa and the late Sir J. N. Tata resulted in an agreement between the Association and the Nippon Yusen Kaisha in 1893. By this agreement, the latter opened a new line to Bombay to carry raw cotton at Rs. 13 per ton, which was Rs. 4 cheaper than the current rate. In consideration thereof, all the members of the Association bound themselves to use the N. Y. K. ships to carry all the raw cotton cargoes imported to Japan, and gave a further guarantee to pay freight for 50,000 bales of raw cotton a year at Rs. 13 per ton, even when the market rate fell below this point in consequence of competition. Apprehension was at first entertained as to the working of this agreement by both the parties, and the agreement was made to continue only for the term of one year. But, happily, this agreement proved to bring some profit to our members, and the N. Y. K. found also that it could make both ends meet. Later, however, when raw cotton had to be shipped from other Indian ports than Bombay, we found the necessity of making the additional agreement by which, in 1894, Colombo and Tuticorin were added as the ports of shipment. In consequence, N. Y. K. sustained some loss and showed an attitude of hesitation to continue the agreement. A petition was sent to the Japanese Government to grant a subsidy. Though this petition was well taken up by the Government, and a bill providing subsidies to steamship lines was prepared for the Diet, the dissolution of the House prevented its passage. Meanwhile, the N. Y. K. concluded an agreement with the P. & O. Co., the Societa Nazionale di Servisi Marittimi and the Austrian Lloyd, to the effect that the cargoes of the members of the Association shipped according to the agreement might be carried by the ships of these companies.

"The agreement has since been revised, and there were changes in the steamship companies admitted into the " Conference", but, on the whole, the agreement maintained its principal

object. Thus it will be seen that this agreement was concluded solely for the purpose of lowering the cost of Indian cotton used in Japan to the benefit of the Japanese spinners as well as to the Indian cotton growers.

"The Government subsidy to the Bombay line of N. Y. K. of which some reference was made, was at last given in 1896 as it was judged necessary in view of the difficult situation in which the company was placed. It is, however, not to be taken as an indirect protection given to the cotton goods exported from Japan ; it was granted for the sole purpose of facilitating the communication between Japan and India. Moreover, and this subsidy itself was stopped altogether in 1906.

"It is also to be added that no preferential treatment in railway freight is given to the cotton yarn and goods of home production.

"Thus it will be seen that the Japanese cotton industry has received no Government protection in the attempt of opening new markets abroad."

Indian Students in America.

Mr. K. T. Paul, General Secretary, National Council of the Young Men's Christian Associations of India, has issued the following on the legal situation as regards Indian students working in America :—

Recently practical difficulties have arisen in the United States owing to the stricter application of emigration and labour laws against Asiatics and the indirect effect it is bound to have on Indian students. This was very glaringly brought to my notice in the States last autumn in connection with certain hardships into which some of our students were suddenly thrown, in some cases owing to a ridiculous application of the law. I felt that the matter should be set right in the clearest possible way and at the source of authority. Accordingly with the assistance of Mr. Charles Hurry of "The Committee of Friendly Relations with Foreign Students" at the American headquarters of the Y.M.C.A., I called on Dr. W. W. Husband, the Commissioner-General of the Bureau of Emigration in the Federal Department of Emigration in the Federal Department of Labour, Washington. Dr. Husband discussed the matter most sympathetically, and one was constrained to admit how difficult it must be for the department to administer the law when the "status of a student" was being not infrequently exploited to camouflouge "labour". But Dr. Husband was perfectly just and was willing to go the whole length in favour of *bona-fide* students. Obviously I could not ask for more. I was there on behalf of the students and not on behalf of labour. I pleaded that the department may take any measures it feels necessary to satisfy itself that a particular person was a *bona-fide* student but that when that fact was established he should have full liberty to work his way through his college or university. Dr. Husband was fully amenable to this precision and in response to my request he sent to me a letter which I am giving hereunder. He has given me permission to publish the letter.....

CONDITION OF ENTRY.

The following is the letter referred to :—

Dear Sir,—I beg to acknowledge receipt of your letter of November 5th, 1924.—You also asked to be advised as to the point of whether students may work for pay and in this connection I beg to say that the Immigration Act of 1924, as you know, provides that a *bona-fide* student is one who seeks to enter the United States solely for the purpose of study at an accredited school, etc., and necessarily this has to be rather strictly construed in order to prevent applicants from using the State exemption as a means of getting into the United States. It was the evident intent of Congress to provide a means by which aliens might have the privilege of pursuing studies in this country, if they come solely for that purpose and with no intention of remaining here permanently. It is probable that before a Consul issues a non-quota student vice he will require an assurance that such financial provision has been made as to insure that the applicant will be able to maintain a student status here. However, it is not believed that if a student contributes to his own support by working for room or board, or for a few hours each day, this would necessarily disqualify him for admission nor is it believed that he ought to be prohibited from working during vocation periods. The point is that he must be primarily a student and not a worker for wages with his studies as a secondary consideration.

Wireless in India.

There is issued by the Bengal Chamber of Commerce the text of a *communique* published by the Government of India in connection with the licensing of a broadcasting service in British India.

It is now intimated that the Government will reserve the right to (*a*) inspect broadcasting stations; (*b*) take over, operate or close down a station or impose a complete censorship in times of emergency; (*c*) require a broadcasting station to maintain a broadcast receiver for the use of Government; (*d*) impose a complete or partial prohibition or pre-censorship either generally or specially at any time; (*e*) issue any special or general instructions as regards the matter which may or may not be broadcasted or as to the persons who may or may not broadcast; (*f*) specify the sources from which news and information in the nature of news may be obtained and the times of broadcasting the same, although other broadcast matter will be allowed at any time; (*g*) terminate the license at any time in the event of improper or inefficient use of a broadcasting station; (*h*) require a broadcasting station to broadcast free of cost to Government weather reports, forecasts, Government notices and *communiques*, and educational propaganda or other Government matter provided the time taken out of the ordinary programme does not exceed 10 per cent.

The local government of the province in which the broadcasting station is located will also be entitled to exercise the rights set out in (*b*), (*c*), (*d*), (*e*) and (*h*).

Broadcast receiver licenses will be issued from Head Post Offices in British India on demand without restriction as to the age, sex, or nationality of the applicant. Other forms of wireless licenses for transmission and reception or reception only will be granted by the Director-General of Posts and Telegraphs subject to certain conditions as at present. The annual fee for each of the above licenses will be Rs. 12, of which Rs. 10 will be the share accruing to the authorities providing broadcasting services.

The following broadcast matter will be permitted :—

Entertainment Broadcasting : *Compulsory.*—Weather reports and forecasts; Government *communiques* and notices : *Optional.*—Concerts and other musical items; Theatrical entertainments and items; Students' programmes; Lectures, readings or addresses provided the subject is entirely non-political; Children's programmes; News, Extracts from newspapers and periodicals; Speeches, provided that the Government has previously approved of the speech and of the speaker; Advertisements and announcements; Any other matter subject to the general or special permission of Government.

Toll Broadcasting : *Compulsory.*—Government *communiques* and notices. *Optional.*—Market and Exchange quotations and reports : news; agricultural, commercial and financial information; advertisements and announcements.

Regarding these programmes the following conditions are laid down; Government *communiques* and notices will be broadcast if so required by the Government.

Students' programmes will be strictly confined to educational matter of a non-political nature.

News will be strictly confined to press messages supplied by specified News Agencies approved by the Government.

If extracts from newspapers and periodicals are in the nature of news or comments on news they must be subject to previous arrangement with the News Agencies in each case. Licencees are not permitted to broadcast any extracts from newspapers on behalf of the newspapers concerned either gratuitously or on payment without the previous concurrence of the approved News Agencies.

In order that the standard of programme may be maintained the amount of advertisement matter permitted shall not normally exceed 10 per cent of any programme as regards the time taken to broadcast.

The question of reciprocal arrangement whereby, in the event of the Indian broadcasting company erecting a station in such a position and of such size that it does in fact serve an Indian State, the Indian broadcasting company shall obtain a share of the license fees paid by owners or receivers in such Indian State, is under consideration by the Government and the Indian States.

In the event of a company being formed in India to undertake broadcasting services in general accordance with the conditions outlined above, the Government of India are prepared to draw up the license and such contingent agreement as may be necessary in consultation with the company.

Manufacture of Artificial Silk.

The display of textile machinery at the Lyons Fair, which has just closed, was extremely limited in range and almost entirely the product of French and Swiss makers. Moreover, the textile industry located in the Lyons district is of a different character from that for which the textile machinists of Roubaix, Tourcoing, and other towns in the North-West of France and also in the Vosges cater. They were, therefore, not interested in the Fair, writes a correspondent in the "Times".

Even though this was the case much of the machinery shown had a special interest for English manufacturers, for it exemplified types useful in the manipulation of artificial silk yarns. The rapid expansion in the use of artificial silk in this country has created a demand for improved winding, warping, and sizing machinery which is being well met by the makers. At Lyons probably the greatest number of machines on exhibition were of a type which has been designed to deal either with silk or the newer fibre, artificial silk.

It was impossible to make a comparison between Continental products and those of this country, except in a few instances to which reference will be made later. One striking and not altogether commendable feature of the exhibition was the very considerable amount of imitation that was evident. Before the war the Germans were good copyists of our looms. To-day it would appear that everyone who wants an easy way of putting a winding machine on the market copies the "Universal" type which, American in origin, was introduced to this country and the Continent over 20 years ago. Some of the copies shown at Lyons were evidently cheaply produced. The idea was apparently to cut out the American machine first by producing a cheap imitation and secondly through the adverse rate of exchange. Certainly there was a great disparity in the workmanship, and the machines labelled themselves as being cheap and not very good imitations. On the other hand, there were a number of firms whose winding machinery was excellently designed and constructed.

Winding Mechanism.

There is quite a distinct difference of opinion in regard to the winding of pirns of artificial silk. On the one hand it is contended that such pirns can be wound direct from the hank to the pirn, provided proper care is exercised and certain small compensating gadgets used. The other opinion is that to get the best winding results the yarn should be wound from the hank to a small flanged bobbin and thence to the pirn. The latter process involves two machines and the necessary extra labour when compared with the direct method.

Certain Swiss firms have shown considerable ingenuity in devising winding machinery for the purpose, and in no sense can it be said that they are copyists. As a matter of fact they are originators, and moreover are producing really well constructed mechanisms.

A new type of rapid winding machine for bobbins dispensed with the usual spindles which support the bobbin during winding. The bobbin was carried just as a piece of work is carried in a lathe by support at the extremities, and the bearings were adjustable so that a varying length of bobbin could be accommodated. In relation to winding machines the glut of adjustable hank carriers or "rices" should be noted. Some of these were so designed as to enable the hank to be readily and quickly placed on them.

In warping machinery there was little new with the exception of an electrically controlled alarm or signal apparatus by the employment of which a broken thread was notified by the illumination of a small electric lamp. The idea is not altogether new, but the arrangement as shown at Lyons displayed considerable ingenuity in construction and application.

Folding and Measuring.

A new type of folding and measuring machine of Swiss make was an extremely good example of the original methods of construction that are being adopted by many Continental makers. The chief features of the machine shown were ease of adjustment and regulation, ease of acceleration, the comparative lightness of the parts which were of forged steel, and at the same time the solidity of the structure. The method adopted for the positive opening and closing of the fabric gripping jaws was ingenious.

Other machines of note were a cloth shearing machine, a hot-air dryer sizing machine, and a twisting and doubling machine. The latter is of particular interest at the present time. It was a machine of Swiss origin and was certainly well built. There is a very considerable demand in this country at the present time for doubled artificial silk yarns.

Such a machine as that shown at Lyons should meet the case. Within certain limits any number of ends can be doubled or twisted. The application of a quick acting stop motion prevents a broken end from being completely wound on the bobbin ; on the breakage of one of the component threads the bobbin is stopped so quickly that a length of broken thread remains clear of the bobbin. An improved form of the old type of Hill and Brown split drum winder was to be seen at the Fair.

One particular and important feature which impressed the writer was the considerable improvement in loom design and construction made by certain Continental makers who are likely to invade the British market. One firm in particular has set out to improve loom construction throughout. It has apparently realized the fact that in weaving delicate fibres such as silk or artificial silk the quality of the ultimate fabric depends on the character of the loom.

India's Match Industry.

"Anyone who has studied the question from all sides will unhesitatingly answer that India is herself capable of manufacturing every match she requires and that there is a great future before the match making industry in India, provided that the industry is developed along proper lines," says Mr. Troup, the Imperial Forest Economist in "The Indian Daily Mail".

Owing to certain restrictions recently imposed on foreign matches outside capitalists are now establishing factories in India. Last year, a big Swedish combine established branches at Madras, Calcutta and Bombay for the manufacture of matches. Early this year, it is reported, an American Match Syndicate has extended operations to India with a capital of thirty crores of rupees. Foreign capital is welcome in so far as it does not harm local interests, nay, it is essential to such enterprises as hydro-electric scheme, wireless concerns, etc., but not for the domestic and cottage industries of the country. Match making is a domestic industry. It is so in Japan, though it has now been raised to the level of an organized industry with large-scale production with the aid of machinery and power in western countries.

A few months ago heavy duties were levied on foreign matches imported into this country. To evade these duties foreigners canvassed orders in India for separate parts of matches, which when collected together at the factories in India made matches in well-finished boxes. The attention of the Government was drawn to the defect of the provisions of the Act when they amended it and stated that "parts of matches" were also deemed as "matches". Anticipating the danger to the indigenous industry, the Match Manufacturers' Association waited on His Excellency the Viceroy, in January last and requested him to levy excise duties on matches produced in India in factories run either wholly or partly with foreign capital. It is said that the Government are going to consider this suggestion favourably.

In his report submitted to the Government of Bihar and Orissa, Mr. A. P. Ghosh, the match expert, says that India has got immense potentialities in wood. He tested about 200 varieties of timber of which he found 50 suitable for use in the match industry. Of course first rate matches like those of Norway, Sweden and Austria, cannot be produced with these kinds of wood but second and third class varieties similar to those of Japan can be manufactured.

Damp-proof glue is required for matches as a remedy against the moist weather during the rainy season. For this use can be made of the glue manufactured in the Madras Government Glue Factory. It has been tested and found suitable for use in match making.

For any new industry expert technical advice and sound business organization are necessary ; research laboratories should be attached to the factories; the question of efficiency should be the sole test in all matters ; cheapness of labour and a regular supply of raw materials are essential. These practical measures will make an industry more than a success.

The following are the chief recommendations of Mr. Ghosh :—1. To retain the present import duty on all foreign matches and parts thereof. 2. To reduce duties on all match making machines and chemicals used for match manufacture. 3. To guarantee a supply of a particular species of timber required for the industry. 4. To reduce railway freight on matches carried within India. 5. To sanction loans for floating new concerns. 6. To encourage the industry by Government support by placing orders with Indian-owned factories.

Water Power in the Empire.

It may be estimated that the power of the water turbines already manufactured or under manufacture to-day in England, according to a "Times" correspondent, is well up to the 500,000 h.p. mark, and to give some idea of what this amount of power means it may be pointed out that it is equivalent to one-sixth of the total water power at present developed in Canada. Works of great importance have already been carried out, and water power developments where a stipulation has been made that all material shall be manufactured in this country have received support from a body which has to use the utmost discretion—the Trade Facilities Act Advisory Committee. It has given its support to several large schemes, including the Tata scheme in India, the Humberarm scheme of theNewfoundland Power and Paper Company, and the North Wales Power Company's new development, and there are other schemes of a somewhat similar nature which are now under consideration in various parts of the Empire.

Manufacturing Facilities.

It is fortunate that with such opportunities for doing business open to them British manufacturers have become able to make hydro-electric plants on a large scale. Although seven years ago there was not a large British firm in this country capable of making big water-power machinery, the English Electric Company have manufactured Pelton wheels of 25,000 h.p. for India, and Messrs. Vickers reaction turbines of 25,000 h.p. for Canada, Messrs. Armstrong Whitworth have delivered turbines totalling 98,000 h.p. to the Newfoundland Power and Paper Company, and whereas in the past the large turbines required for New Zealand were made in Switzerland, to-day they are making three vertical Francis turbines of 25,000 h.p each for the New Zealand Government's Arapuni scheme.

The holding of the Power Conference in July last at Wembley served to centre the thousands of a large part of the engineering world on the vital importance of attacking the Empire's power problem in a correct manner. The opportunity of discussing the various phases of power development, whether legal, financial or technical, with some of the greatest authorities from all parts of the world, certainly served one of the purposes for which that Power Conference was devised, for it familiarized British engineers with the manner in which such problems are approached in other parts of the British Empire and the world in general. Names which they knew merely in works of reference or in articles on hydraulics, gained a new interest when they became acquainted with the men themselves, and their natural hesitancy in approaching an authority on a power subject whose acquaintance they had never made will no longer stand in the way of their soliciting assistance in those general ways which can be so helpful and in those particular ways which are so necessary.

Training.

Facilities for training in hydro-electric matters have, like manufacture, entirely changed. At London University there are regular courses in turbine design, etc. At Manchester one of the British authorities on water power supervises the training, and most of the other universities provide courses which will help to fit their students for a career connected with water power development. Much, it is true, still remains to be done, such, for example, as investigations into high-speed runner design and the design and lay-out of pipe lines, and the preparation of statistics in regard to water supply ; and it must be remembered that only so soon as there is a large supply of students trained in these subjects will it be possible to give that close and minute attention to water-power resources which for many years past they have received in Canada. If all that had been hoped for under the influence of the enthusiasms engendered by the cessation of hostilities has not been accomplished, there is ground for satisfaction in the fact that water power, which will be largely the key to industrial supremacy during the next era, is a branch of engineering in which British engineers and manufacturers are now able to hold their own.

Daily serving the public at railway stations and other places, with thousands of vending machines that dispense everything from sandwiches and all-day suckers to shoe shines, newspapers and cigarettes, the slot machine has become one of the most carefully organized catch-penny industries in the world. In America, the art of putting the machine where it will catch the most trade has been carefully studied. An owner of 400 slot devices in New York has found that the suburban-station platform is the best location.

Branch Railway Policy.

The following is an extract from the Proceedings of the Committee of the Bengal Chamber of Commerce for the month of April, 1925 :— At the annual meeting of the Associated Chambers of Commerce of India and Ceylon on the 15th December, 1924, a resolution was carried *nem con* stating that the Association viewed with concern the position of uncertainty existing in regard to the attitude of Government towards the construction of feeder lines of railway by private enterprise, and urging that a definite decision should be arrived at as soon as possible. The Association further placed on record, in the resolution, its opinion that the development of the country should be the first consideration and that, if private enterprise put forward sound schemes which Government did not propose to undertake without delay, private enterpise should be allowed to carry them out and be given every possible facility and inducement to do so.

The Government of India, Railway Department (Railway Board), issued a resolution on the subject on 19th February. The resolution reviewed the terms on which branch lines and feeder lines have been constructed during the past thirty years, namely, under an agreement with the agency financing the construction Government either guaranteeing a minimum return on the capital, or, out of the earnings of the main line from traffic contributed by the branch, such a sum as will make up the total earnings of the branch to a given sum, the branch sharing with the main line any profits exceeding the guaranteed minimum. These terms have made possible the construction of many lines which could not have been undertaken otherwise for the reason that Government was not in a position to provide the necessary capital. The resolution explained that the Government of India had decided to abandon the branch line policy hitherto followed, and to provide, themselves, the funds required for future schemes.

The Government of India's resolution was circulated to the Associated Chambers for an expression of opinion as to whether a strong protest should be lodged against the policy indicated by Government. The result showed that the Chambers were not unanimous regarding such a protest and no action was therefore taken by the Association. It seemed, however, to the Committee that it was desirable to place on record a formal protest against Government's policy, and they accordingly addressed a letter to the Railway Department on 22nd April, of which the following is an extract :—

The Committee of the Chamber have noted the terms of the resolution with regret. The views of the commercial community were ably and fully expressed by the speakers who supported the resolution on the subject which was carried at the annual meeting on 15th December, 1924, of the Associated Chambers of Commerce of India and Ceylon and the Committee do not now propose to refer to the subject in detail. But they do not think that they can allow the occasion of the publication of the Government's resolution to pass without submitting a strong protest against the adoption of a policy under which, in their opinion, cases are bound to occur that cannot be dealt with in a manner most advantageous to the development of the country ; and the object of this letter is to record that protest.

The Committee are prepared to admit that, if Government find it possible to carry out in practice the policy which they outline, there will be little reason for apprehension. But they greatly fear it will not be found practicable for Government to provide the funds for all the projects required if the development of India is to proceed uninterrupted ; and, in view of this feeling, they regret that Government should definitely rule out a procedure that has in the past greatly assisted the opening up of districts that would otherwise have had to wait for years before obtaining the benefit of a railway.

The Committee feel that, under the procedure explained in the resolution, projects will inevitably come up for consideration which the Government of India will not themselves be willing to finance immediately, and will in consequence have to stand over for an unreasonable time, although they might have been constructed forthwith by private enterprise. It therefore appears to the Committee that Government should have allowed the two systems of providing funds to continue as they did before the branch line terms were held in abeyance.

Although Chinese manufacturers and inventors have not improved on the silkworm's delicate thread, yet they have produced from wood pulp a silky material which they weave into silk stockings. Wood is reduced to a pulp and treated chemically till it is reduced to a glutinous jelly. It is then pressed through a strainer containing dozens of microscopical holes. The jelly sets like glue after it emerges from the holes, and each hair-like strand is drawn out yard after yard, and wound on spools, just like the real silk drawn from cocoons. Three, four, or even five, of these strands, according to the quality of the fabric to be woven, are then spun together like rope and made into fine thread.

Economics in the West.

The Reversion to Gold.

London, 1*st May*, 1925 :—The restoration of the gold standard in this country has been the declared policy of successive British Governments during and since the war. For some time past it has been widely recognized that this course was inevitable, not only on account of the general world opinion in favour of the gold standard, but also because of the imperial interests involved in a common monetary basis. The Government announcement in the budget speech of an immediate return to the gold standard was none the less unexpectedly sudden, as it was widely supposed that some previous notice of the return would be given, in order that conditions might adjust themselves in the interim period before the actual step was taken. Even though the decision has already been put into effect we are not exactly in the position occupied before the war, since gold export is not yet absolutely unrestricted and notes are not unreservedly redeemable in coin. Nevertheless we are already on an effective gold standard, and it may be of interest to consider some of the questions arising out of the Government's plans, which were largely the outcome of the deliberations of an expert committee.

The report of the Committee on the Currency and Bank of England Note Issues, appointed by Mr. Snowden nearly a year ago, begins by dismissing briefly the alternatives to a return to the pre-war gold standard and declaring unreservedly for the latter. It then expresses the view that the gold standard at the old parity could readily be established and maintained, "provided that by control of credit we adjusted the internal purchasing power of the pound to its exchange parity, and restricted out foreign investments to our normal export surplus." Both of these are important conditions. On the first point it is acknowledged that the pound was overvalued at the time of the writing of the report in February last and that further deflation will probably be necessary unless American prices rise relatively to British. As regards the second condition, it is pointed out that the gold standard itself provides machinery by which foreign investment on a scale exceeding the amount available as a result of trading operations is prevented by the movements of gold.

Recommendations of the Committee.

The Committee therefore recommended the Government to declare its irrevocable monetary policy to be an early return to the gold standard and to announce that the existing restrictions on gold export would be allowed to expire at the end of the year. A general licence should be given to export gold sold by the Bank of England for that purpose, and this power should be resolutely used by the Bank in case of need. The view is expressed that the Bank, can carry out this policy without external assistance, but nevertheless, in order "to discourage speculation and contribute to the creation of a general atmosphere of confidence favourable to the smooth working of the operation", the raising of a substantial American credit was suggested. It is frankly recognized that there may be some tendency when parity is reached for foreign speculators to realize their holdings of sterling and thus to depress the external value of the pound. It is held, however, that the existing gold reserves are sufficient to cope with the situation, and that they should be used, even though involving a temporary increase in the Bank rate, to a substantial extent before any credits it may be considered advisable to raise in America are drawn upon. Otherwise the borrowings will only aggravate the situation.

On the question of currency the Committee, while expressing a preference for a fixed fiduciary issue, do not recommend any specific figure for that purpose. The report states that the ultimate figure must depend to some extent on whether gold is or is not used largely for internal purposes, and then proceeds to recommend that gold coins shall not be passed into circulation, on the ground that this is not an essential part of the gold standard mechanism. None the less the Committee estimate that the experience necessary to enable the amount of the fiduciary issue to be definitely fixed will have been acquired by the end of 1927, and that the transfer of the currency note issue to the Bank of England can therefore take place early in 1928, or possibly before that time.

Government Action.

The recommendations of the Committee form the basis of the steps taken by the Government for the restoration of the gold standard. The Gold and Silver (Export Control, etc.) Act of 1920 is to lapse at the end of the year, but the Bank of England immediately on the

announcement of the Government's decision, was given a general licence, for the export of gold bullion. Under the Gold Standard Act of 1925 bank and currency notes are rendered inconvertible into gold coin until this provision is reversed by proclamation, though the Bank of England is still under obligation to give gold bars in exchange for legal tender. The Bank is given the sole right to hand bullion to the Mint for coinage, but remains in the position of having to purchase gold at the standard rate as provided under the Bank Charter Act. The whole of the gold in the currency note reserve amounting to 27 millions, was immediately transferred to the Bank of England in exchange for notes. Finally, in order to safeguard the gold parity of sterling, arrangements have been made for revolving credits in the United States to the extent of 300 million dollars, to be drawn on if, as and when requried.

The terms of the two credits making up this aggregate vary in some respects. The first, provisionally granted by the Federal Reserve Bank of New York to the Bank of England and amounting to 200 million dollars, is for two years from May 10 or the date of the British Government guarantee, whichever date is the later. The second, for 100 millions, may be extended direct to the Treasury by a syndicate headed by Messrs. J. P. Morgan & Co., and is also to run for two years. In each case interest is to be paid as the credits are drawn on at 1 per cent above the re-discount rate of the Federal Reserve Bank of New York, with a minimum of 4 and a maximum of 6, or if the Federal Reserve rate exceeds 6, then at the Federal Reserve rate. The only charge in the event of the credits not being used is a commission on the Morgan loan at the rate of $1\frac{1}{4}$ per cent in the first year and, if the credit is still not drawn on, half that amount in the second, in consideration of the right to draw.

Opposition Criticism.

The principal criticisms levelled at the policy of the Government during the debates in the House of Commons were twofold. First, it was claimed that the decision to revert immediately to a gold standard showed undue precipitancy, and secondly, it was a widely held view that Section 4 of the Bank Charter Act should have been repealed, so as to allow the Bank of England to refuse gold offered to it for purchase, and thus to protect this country against a heavy influx of gold consequent on a rise in American prices. The first criticism is based on the generally accepted view that sterling has for some time past been overvalued in consequence of the purchase of sterling securities and the accumulation of sterling balances by foreigners with the twofold object of making an exchange profit on the movement to parity and of taking advantage of the higher interest rates obtainable in London. It is therefore held that when parity is established the liquidation of this indebtedness will exert a depressing effect on the exchange and that, unless the dollar credits are freely utilized, severe deflation in this country must necessarily ensue.

The Treasury rejoinder to this argument is weakened by complications. It in no way assists the Government case to argue that the moment was opportune for a return to the gold standard because failure to effect it at that moment would have been attended by a serious fall in exchange. This is no argument. It is merely another admission that American and British prices are not yet in adjustment. And in any case, whether on a gold standard or not, prices must adjust themselves, and the speculative position is none the less likely to be liquidated. In the absence of an adequate relative rise in American prices there must be gold exports and deflation in this country, in order to meet the American demand for dollars to replace their holdings of sterling, now that parity has practically been reached.

Furthermore, it only weakens the Treasury's case to insist that overwhelming advantages in trade and debt payments must necessarily accrue from a high dollar valuation of the pound. The valuation is purely an arithmetic expression, and no benefit can be reaped by this country from an appreciation of sterling unless brought about by a rise in American prices, which lessens the real burden of our external debt. In addition, any over-valuation of sterling in comparison with its purchasing power parity places a check on our export trade, since foreigners must pay more for their goods in sterling than is justified by the level of prices in their own and other countries.

But in any case, since the Government have decided that the moment was opportune for an immediate return to the gold standard and that the negotiation of American credits was, if not vital, then advisable for the success of the scheme, criticism on the ground of failure to relieve the Bank of England from its obligation to buy gold has no practical value, for such relief could not have been secured. Any such option given to the Bank would represent an important abrogation of the gold standard, and would mean that we were not in fact returning to the gold standard at all. To a

proposal of this kind the United States would not conceivably have agreed, and since their assistance was deemed necessary, their interests must also be considered. Hence it is beating the air to criticise the Treasury on this ground alone, since however desirable or far-sighted it might have been to place ourselves in the position of being able to refuse gold imports, to put forward any such proposal is really to raise the whole gold standard *versus* managed currency issue.

Utilization of the Credits.

Perhaps the question on which light is most needed however is the matter of the utilization of the American credits. The Government's pronouncements on the possibilities of a rise in the Bank rate and further deflation, the actual practical use of the credits, and their effect on speculators, provide an interesting study in economic or political confusion. It is well to start with a question. Is it or is it not a fact that foreigners accumulated large amounts of British securities and balances in anticipation of a profit on sterling's rise to parity or for the higher interest rates obtainable here? If this be admitted the trade figures of recent months give no indication of any large scale liquidation of this indebtedness. The Government agree that these balances do exist, a fact which was recognized in the report of the Committee on the Note Issues. This being the case the provision of American credits cannot possibly prevent the unloading of sterling in exchange for dollars. The owners of these assets are bull speculators, who are in a position to demand dollars. The credits can be used to meet these claims, but not to defeat them, however strong a weapon they may be against bear speculation.

The Government state however that there is little likelihood of the credits actually being used, and the Chancellor has made it abundantly clear by constant repetition that they will be drawn on only after the failure of other means of protecting the exchange.

Probability of Deflation.

Assume that the credits are not drawn on. What then are the implications? One of the pre-requisites is that the sterling balances now held in London on foreign account should, as far as possible, be kept here. Some of them, which have been accumulated solely to reap a profit on exchange, will undoubtedly be disposed of, but others may be retained by the magnetism of higher interest rates. On the other hand, with the re-establishment of the gold standard there may well be a tendency for a larger amount of trade and foreign bank funds to be maintained in London, and these may to some extent replace the balances recently accumulated for speculative purposes. A substantial margin must however be preserved for a considerable time between British and American money rates, and if American rates should rise, then it would seem that British rates must rise accordingly. Furthermore, in order to check a probable outflow of gold to cover the removal to the United States of sums held here for the rise in sterling, it may be necessary to raise the Bank rate. In other words, failing a rise in American prices, deflation in this country seems a distinct possibility. And yet this, says the Chancellor of the Exchequer, is in the Treasury's view improbable.

The report of the Committee on the Note Issues specifically advises that the credits shall not be used until there have been heavy shipments of gold and a rise in the Bank rate. Indeed, it would not be surprising if it transpired that some such terms were included in the credit arrangement. If this be the case the bargain would appear to have been struck with a single eye to the attainment of the gold standard without regard to the reactions on British industry and its dependent population.

All this, however, does not alter the fact that we have returned, for good or ill, to the gold standard. We are thus attempting to work on a monetary basis similar to that in use before the war, but in markedly different conditions. On the Government's own admission the price level in this country will need to be adjusted to the American before permanent exchange stability is assured, while a speculative position rendered profitable by the rise in sterling still needs to be liquidated. Until this indebtedness is wiped out we cannot arrive at a position in any way comparable with that existing before the war. The debris of a paper regime must be cleared away before the permanent new structure can be erected.

Importance of Rise in American Prices.

In this task of clearance we should be greatly assisted by a rise in American prices, rendering substantial deflation on this side unnecessary. What are the chances that such a rise will take place? It must be remembered that there exists in the United States an enormous volume of potential purchasing power, based upon excessive gold reserves. And so far from dwindling, this cash basis is not unlikely to expand, for on balance gold will probably continue for some time to flow into the United

States. Furthermore, the credits arranged for by this country, if and when utilized, will add to the actual monetary purchasing power circulating in the United States. From this point of view the Federal Reserve Bank credit is of superior importance, since it will form an addition to the cash basis upon which the banks themselves will be able to extend a much larger volume of domestic credit. Conditions therefore may easily tend to an expansion of the circulating media and thus to a rise in American prices, and this tendency will be reinforced by the possibility that the return to the gold standard by a number of countries may encourage greater freedom in foreign lending on the part of the United States.

Unless a most resolute policy of credit control is exercised by the banking authorities in the United States, therefore, there would appear a strong probability of a rise in prices in that country. It may be true that the Americans will exercise every effort to avoid such an eventuality, but the pressure of events may prove too strong even for the most skilful and rigorous regulation of credit conditions. In any case, from the British point of view it can only be hoped, for reasons already elaborated, that the Amercian price level will rise sufficiently to relieve the British people of the incubus of further deflation.

The Budget.

Mr. Churchill's budget, introduced on April 28, has had a mixed reception. His proposals to reduce income-tax and give relief to the super-tax payer have been welcomed by those who believe that taxation in recent years has been on a scale so high as to impair business energy and deprive industry of indispensable capital. For the same reason the extension of the insurance scheme, which may increase the annual charge on industry by as much as 20 millions, is regarded as being ill-chosen in point of time and indeed inconsistent with a profession of concern for the welfare of British trade. The Chancellor's first venture in fiscal policy appears likely to be ill-fated. The re-imposition of the duties affecting motor cars, pianos, etc., was not unexpected, but the proposal to subject silk and artificial silk to customs and excise duties has raised a storm of protest and is already in process of modification.

Financial Year, 1924-25.

The final results closely approximated to the Budget estimate though varying in several important details on both sides of the account. Excess profits duty brought in only £700,000 net against the estimate of 8 millions, and in addition customs and excise, corporation profits tax, interest on sundry loans and special receipts, including 12 millions on account of German reparations, all yielded less than had been anticipated. On the other hand, receipts under the remaining headings exceeded expectations, particularly in case of the income and super-taxes, estate duties, stamps, postal services and ordinary miscellaneous revenue.

Expenditure exceeded the original estimates by $5\frac{3}{4}$ millions, debt charges being 7 millions higher than anticipated chiefly owing to the increased cost of the floating debt. The year ended with a surplus of £3,659,000 which, together with the 45 millions provided in expenditure for sinking fund purposes, was devoted to debt redemption.

National Debt.

Since the end of 1919, when the debt was at its highest, 736 millions of cash have been applied in reduction, but, owing to nominal additions of 385 millions arising from the issue of conversion loans at a discount, the net decrease has been only £351,606,000. There has been a considerable saving in interest payments in recent years, the charge for the current year being £170,900,000 less than the interest payable in 1920-21, including interest due on the American debt.

During the year the gross deadweight debt was reduced by £34,229,000, a sum less than the amount actually applied in redemption owing to the issue of conversion loans at a discount. Of this amount only 4·2 millions is in respect of external debt, repayment of nearly 8 millions of American loans being partly offset by borrowings of 3·7 millions from Allies. Loans from the latter now total 135·7 millions as against which we hold the obligations of foreign Allied Governments for an amount of 2,062 millions, including accrued interest. War loans to the Dominions stand at 130 millions, and in addition $43\frac{3}{4}$ millions are owing to the British Treasury in respect of loans to various continental countries for relief, reconstruction, repatriation, stores, etc.

Expenditure, 1925-26.

For the second successive year expenditure, if equal to the estimate, will be heavier than for the preceding year, the total for 1923-24 being 789 millions, for last year $795\frac{3}{4}$ millions, and for the current year $799\frac{1}{2}$ millions. Whereas last year's increase was entirely due to heavier debt charges, this year the increase is attributable to larger outlays upon the navy and air force. The debt charge, despite an additional allocation of 5 millions for sinking fund, is

expected to be 2 millions lower owing to savings of 7 millions in interest payments. Whether this expectation will be realized will depend in large measure upon the course of discount rates in the coming months. No allowance, however, is made for possible economies in the expenditure on the fighting forces or under the heading of civil services, which includes 66 millions for the Ministry of Pensions, 46½ millions for education, 27 millions for old age pensions, 22¼ millions for the Ministry of Health and 14 millions for the Ministry of Labour.

Revenue, 1925-26.

The revenue estimate is 826 millions on the basis of last year's taxation, despite the remissions of a year and two years ago. This compares with 799½ millions actually collected in 1924-25. No part of the difference of 26½ millions is attributable to any anticipated improvement in trade, increased reparation payments by Germany, repayment of debts by Allies, or any contribution by the Irish Free State towards the debt and other charges. An additional sum of over 15 millions is expected to accrue from income-tax, owing mainly to the inclusion in the period covered by the three year average of a relatively good year in substitution of 1921 when trading profits were poor; on the other hand, corporation profits tax is expected to yield 9 millions less. A sum of 30 millions is estimated to accrue as special receipts, of which 9½ millions will come from German reparations, 1 million from India in respect of the war contribution, 5 millions from disposals, 4 millions from liquidation of shipping, 3 millions from food liquidation, and 6 millions from balances of trading with the enemy.

The proposed changes in taxation outlined in another column are estimated to cost £24,940,000 this year and £31,170,000 in a full year.

The estimated revenue for 1925-26 on the new basis of taxation is 801 millions, and with expenditure at 799½ millions, irrespective of allowance for supplementary estimates, a balance of only 1½ millions remains for contingencies.

Proposed Revisions in Taxation.

Estate Duty.—The percentage rates of duty are raised forthwith on estates where the net principal value lies between £12,500 and £1 million. The yield thus accruing is estimated at £4,500,000 this year and £10,000,000 in a full year.

Super-Tax.—Reductions of 9*d.* and 1*s.* in the £ on smaller incomes and 6*d.* on larger incomes have been made in the rates on incomes not exceeding £15,000. Similar reductions are applicable to the first £15,000 where the annual income exceeds that sum. The cost of this remission in the current year is estimated at £6,700,000 and in a full year at £10,000,000, a sum equivalent to the additional yield expected to be derived from the increased Estate duties.

Income-Tax.—The standard rate which for the past two years has stood at 4*s.* 6*d.* in the £ is reduced to 4*s.* and at the same time in place of the former allowance on earned income of 10 per cent, maximum £200, a deduction of one-sixth, maximum £250, may now be made in order to arrive at the figure of assessable income. This relief will affect the tax payable on earned incomes below £2,000. Over the whole mass of income-tax payers with incomes under £1,000, representing 90 per cent of the total, the relief will give a benefit, on the average, equal to 6*d.* in the standard rate and much more in the case of smaller incomes. Where the total income of persons of 65 years or more does not exceed £500, investment income will in future be regarded as earned income. This latter relief will be granted to married couples when either spouse becomes 65. It is proposed to alter the present system of quarterly assessments in the case of wage earners and thereby to effect a saving of £100,000 a year in the cost of collection. The loss of revenue on account of the reduction of 6*d.* in the standard rate is estimated at £24 millions this year and £32,000,000 in a full year, while the additional relief referred to above is calculated to cost £3,000,000 in 1925-26 and £7,500,000 in a full year.

New Import Duties.—It is intended as from July 1 next, if not earlier, to reimpose on certain imports the *ad valorem* duty of 33⅓ per cent first charged in 1915 and discontinued in August 1924. The imports thus affected are motor cars and motor cycles, other than commercial vehicles, clocks and watches, musical instruments and cinematograph films. The *ad valorem* duty will apply as in the past to component parts of the first three items other than motor tyres. From these renewed duties £1,600,000 is expected to accrue this year and £2,800,000 in a full year.

In addition as from July 1 customs duties are proposed upon imported silk, artificial silk, and articles made wholly or partly of silk or artificial silk, and excise duties are contemplated on home-produced artificial silk. From these two sources £4,000,000 is expected to be received this year and £7,000,000 in a full year,

though these estimates may need to be revised in view of possible modification in the suggested duties.

A duty of £4 per cwt. on imports of foreign hops is contemplated for a period of four years as from August 16 next and is estimated to bring in £130,000 this year and £250,000 in a full year. A small additional duty is also to be imposed on imported beer, but the effect of this on revenue is negligible.

Increased Preferences.—By the application as from July 1 next of increased preferences upon dried fruits, sugar, tobacco and wine, customs and excise revenue will be reduced by £470,000 this year and £1,720,000 in a full year. The increased preference on sugar, molasses, glucose and saccharin is proposed for a period of ten years or for such time within that period as the full rates of duty on those articles do not fall below the proposed amounts of the preferential rebate. The increased preferences introduced in this year's Budget give effect to proposals of the Government at the Imperial Economic Conference of 1923 in so far as those recommendations do not involve any new or additional duties upon food of any sort or kind.

Little indication was given by the Chancellor with regard to expenditure in future years. Beyond referring to automatic reductions in war pensions and a saving for a time of five millions a year in interest charges, he expressed the confident hope that economies of 10 millions a year would be effected in supply services over an unnamed period. On the other hand, the State will be required to make a substantial contribution to the new pensions scheme and in addition larger payments on account of the old scheme ; but according to the Chancellor this expenditure will be less than the automatic saving in war pensions.

The provision in expenditure for sinking fund is fixed at 50 millions a year under the Finance Act of 1923.

Alcohol from Prickly Pear.

As is well known, prickly pear, a cactus of the Oponia tribe, is one of the worst pests that Australia has to deal with, and hitherto it has not been dealt with, but left alone. In New South Wales and Queensland there are more than fifty million acres abandoned to the pest, and this acreage is increasing at the rate of one million acres per annum.

All efforts to eradicate the pear have failed, and the cost of a national effort for this purpose would be enormous, certainly not less than £250,000,000, and possibly without result. It has been found impossible to destroy the pear by uprooting, and the only known method is by means of a parasite which lives on the outside of the pear, and if it can be introduced into the cellular formation below the tough skin, kills the plant.

It has been known for long that power alcohol could be distilled from the pear, but the cost of cutting, crushing, and distilling has been estimated to be so enormous that the return of one and a half gallons per ton would be quite incommensurate with the expense.

Five years ago, Dr. W. M. Sinclair commenced investigations into the problem of the prickly pear, in connection with research that he was conducting into the problem of cancer. Assuming that cancer is a disease of the cellular system, he deduced that the cactus should be able to give him useful information which by analogy might be available for cancer research. He has, during the past five years, obtained a great deal of information, but so far it throws no light on the problem of cancer.

On the other hand, he appears to have solved the prickly pear problem. He has resolved the difficulty of getting the parasite inside the skin. He has discovered a method of distilling power alcohol from the crushed pear to give a yield of 14 gallons to the ton, and thus it will be possible for him and his associates not only to clear the enormous acreage now abandoned and free it for migrants, but to provide power alcohol for Australia from illimitable and local sources.

One really interesting and amusing feature of the business is that there are parts of Australia where, to ensure economy of cost prickly pear will have to be cultivated for the production of power alcohol.

The scheme has received the benediction of the Queensland Government, and will receive those of both the New South Wales and Federal Governments.

Virtually everyone is taking on an average eight grains of boric acid a day. One begins at three years of age, and does not stop until one dies.—*Professor Dixon.*

Canadian Trade and Finance.

Montreal, 1st May, 1925.—So conflicting is the evidence which may be gleaned from basic conditions in Canada that it is impossible to forecast the immediate future of Canadian business. It is possible that the recent decrease in car loadings and the slowing up of business which apparently took place in March and early April were merely seasonal developments. The volume of spring building has not developed to a point warranting either optimism or pessimism. Reports of slight increases in the volume of manufacture do not conceal the fact that most factories are working on a part time basis which is not profitable. The eastern coal strike and the low price of coal are factors complicating the mining situation. Lumbering operations were generally satisfactory during the winter and there have been enquiries for substantial quantities of lumber, but few orders have been booked and prices are unsatisfactory. On the favourable side British Columbia reports the second best halibut catch in her history; in the Prairie Provinces the livestock have wintered well, and from the East comes the news of record breaking woodpulp production. With the arrival of spring, business will become more active. It remains to be seen, however, whether the improvement this year will be only seasonal or whether certain fundamental improvements in the business situation have really taken place. We are inclined to believe that the latter is the case.

Canada's Non-Ferrous Metals.

Canadian exports of non-ferrous metals have risen from a value of $42,000,000 in the 12 months ending February 28, 1923, to $88,000,000 in the year ending February 28, 1925. Gold finds in Northern Ontario account for a large proportion of this increase and the new finds this spring indicate that it will not be long before Canada is mining more gold in a year than the United States. In 1922, Canada exported four million dollars worth of gold; and in the twelve months ending February 1, 1925, exports had risen to twenty-eight million dollars worth. The gold rush this spring may bring in an unusual amount of gold during the coming year, but gold mining in Canada is now on a sufficiently stable basis so that steady increase in production and export may be expected, whether or not the anticipated finds are particularly spectacular.

The value of the lead exported has quadrupled in the last three years. In the twelve months ending February 1, 1923, the value of this export amounted to two million dollars, and for the past year it is about eight million dollars. There were other very important increases registered in this group. The value of the nickel, aluminium, copper and zinc exported, doubled during the period.

Of these non-ferrous metal exports, fifty-seven million dollars worth went to the United States, nearly seventeen million dollars worth went to Great Britain and more than five million dollars worth to Japan. Japan is thus Canada's third best customer for her most rapidly developing industry.

The Development of the Far East.

The western world regards Gandhi as an anachronism because of his opposition to machinery, but the acute hardships and suffering of India's industrial revolution led the Indians to seek any leadership that promised relief from their present troubles. India, Japan and China are all entering the period of transition from the conditions characteristic of the handicraft stage of economic development, to those conditions that are characteristic of modern industrialism.

In such a period, progress is usually too rapid for smooth adjustment. Price levels, volume and conditions of employment, processes of manufacture and methods and relationships in distribution become chaotic.

The weaver who manipulates a hand loom finds that textiles are made so cheaply by machinery that his product does not yield a living wage. As this and other inventions are adopted, hundreds and then thousands find themselves without work. Types of labour that have required years of apprenticeship are no longer needed by society. The workers are impressed with the idea that the effect of the machine is to make their work unnecessary. It is unquestionably true that the transition leaves many who were highly trained workers under the old regime, totally unadjusted to the new situation and it is not surprising that they regard the machine first with distrust and later with open hostility.

Those who visualize the complete process and realize that the outcome for the people as a whole will be an increased per capita production, followed by an increased consumption, which will express itself in a widespread rise in the standard of living, may

think that the reward is worth the cost, but for those who are actually living through the period of change, perspective is difficult if not impossible.

The Industrial Revolution in England in the 18th century also centred around the textile industry. With the installation of machinery, the work of the hand weaver became unprofitable. Machine-made cloth was cheap enough to displace that woven by hand, not only in England, but all through Europe. The new world supplied wool and wheat far cheaper than they could be produced in England, so that the workers left the farms for the already overcrowded cities, producing an increasing surplusage of labour, only gradually absorbed by increased factory requirements.

In the United States, at that period, the adjustment to those changes did not present such difficulties. The markets of the old world readily absorbed the ever-increasing volume of products, and factory and farm continually called for more labour. For the United States, this readjustment was favourable.

Increased productivity and higher standards of living will be the results of this new industrial revolution in the East. In the long run, Canada, Australia and South America are bound to profit by this eastern development. More and better food, more and better clothes and other products are going to be needed in that portion of the world. International trade will be stimulated, and the undeveloped resources of the world will be sought out to supply the needs of these peoples. As the older industrial revolution favoured the rapid development of the resources of the United States, this new revolution will stimulate activity in those countries where there are still large undeveloped resources.

The process seems to present so slow a change as to have little meaning for us, and yet the trade of the world is already showing effects that may be partly attributed to this industrialization of the East. In 1890, before any large amount of machinery had been introduced into Japan, her imports from Canada were valued at $25,000. By 1900, when the process had obtained only a little start, the imports had only grown to $50,000, but by 1910 they rose to $660,000, in 1920 to $21,000,000, and in the last fiscal year Japan bought $26,000,000 worth of Canadian products. In 1890, our exports to China were $30,000, by 1900 they were $250,000. In 1910 they amounted to $1,000,000, in 1920 to $5,000,000 and last year they were $12,000,000. In the last fiscal year, Canada's total exports were five times as valuable as in 1910, but her exports to Japan during this same 14 year period grew so rapidly that they were 40 times as valuable as they were in 1910, and her exports to China and India 12 times as valuable as at the beginning of this 14 year period. Such a rate of development can only be accounted for in terms of most fundamental changes in the economy of the East.

Japan.

While it is true that Canadian exports to Japan in the last fiscal year ending in March 1924 were disproportionately large because of the effects of the earthquake, yet the more recent developments suggest that Canadian exports to Japan will constitute a rapidly increasing proportion of Canada's foreign trade. Japanese imports after the earthquake consisted to a large extent of building materials, including iron and wood products; the last year has witnessed a rapid fall in these requirements, but the products of Canadian mines, fish from Canadian waters and the vegetable and animal products from Canadian farms are going to be more needed in Japan. The following table gives some idea of the rapid increase in the exportation of those products most needed by Japan:—

Exports to Japan in the ten months ending January 31st.

Agricultural Products.

	1923	1924	1925
Wheat ...	$1,979,216	$4,774,303	$5,831,013
Chilled Beef ...	16,703	51,822	98,569
Butter ...	98,913	166,303	170,966
Hides and Skins	43,020	102,544	118,778

Fishery Products.

	1923	1924	1925
Salmon, dried and salted ...	365,548	384,502	459,209

Non-Ferrous Metals.

	1923	1924	1925
Aluminium & Aluminium Products	291,734	604,615	1,146,881
Electrical Apparatus ...	61,666	43,234	255,554
Lead & Lead Products ...	940,955	1,336,032	1,909,740
Zinc & Zinc Products ...	1,384,477	1,609,175	1,703,794

These increases in exports have taken place in spite of the reduced buying power that resulted from the earthquake. As Japan recovers from the effects of this disaster, even more substantial gains in her requirements for Canadian products may be expected.

Business Conditions in the United States.

The volatile response of the American business man to waves of optimism and pessimism has frequently overaccentuated the normal trend of business in the United States, and the results of this tendency are particularly well exemplified in the minor business cycle that occurred last year and in the one that is now in progress. With tremendous purchasing power in the hands of the southern and western farmer and with exports maintaining their present high level, there can be no question as to the fundamental strength of the present business situation, but changes in volume of business and in the level of prices have been so marked during the last ten years, that there is a tendency to believe that business must either be on the up grade or the down grade, *i.e.*, that stability of business is unlikely. When general business after the short recovery of last autumn seemed to suffer a slight check in the early part of the year, optimism was at once succeeded by a widespread feeling of pessimism. Such psychological waves may temporarily accentuate or slightly retard the general volume of business, but so long as the more basic factors remain as favourable as they are, there can be no real business depression in the United States. So far as the general price level is concerned, since 1921 prices have remained comparatively close to 60% above the 1913 level. Recent fluctuations have brought the prices of manufactured articles down to this level and have taken the prices of agricultural products up to this same level. Such phenomena are suggestive of business stabilization rather than of depression. In our opinion, the increase in the average price of shares during the last year represents neither an unjustified boom nor a new inflation, but is merely a capitalization of the new earning power which must come with this new price level.

The British Empire Exhibition, 1925.

London, 1st May, 1925.—Wembley, by this time, is a household word the whole world over. It stands in the eyes of the British Empire for a great concerted effort to tell the world what the British Empire is. It stands in the eyes of the rest of the world for a definite attempt on the part of the British Empire, the first made by any nation or group of nations since the end of the War, to start afresh the slow-moving wheels of commerce.

Wembley in 1924 did much to fulfil the aims with which it was started. But much yet remains to be done. That is the reason for the holding of the new Exhibition this year, an Exhibition with all the attractions of the old Exhibition and many fresh ones of its own.

The objects of the British Empire Exhibition, 1925, may be briefly summarized as follows :—

1. To continue the work of Empire education begun in 1924.
2. To show to the people of the home country the almost illimitable possibilities of the Empire Overseas.
3. To seek, in the development of the raw materials of the Empire, new sources of Imperial wealth.
4. To foster inter-Empire trade and to open up fresh markets both for Dominion and home products.
5. To make the various races of the British Empire better known to each other.
6. To serve for six months as the social centre of the Empire.

In the new Exhibition practically every part of the British Empire is represented in the pavilions specially erected last year to house their displays. The British Government is again at home in the concrete pavilion guarded by the six concrete lions. Home industries are displayed in the Palace of Industry and Palace of Engineering, and in numerous smaller pavilions and kiosks throughout the grounds. The art of the Empire finds a home in the Palace of Arts. The Stadium is the scene of numerous athletic events and spectacular displays, and the Amusements Park is again attracting the attention of the young and the frivolous.

The Dominions and Colonies have all entered into the spirit of the Exhibition in the same enthusiastic way as they did last year. All have prepared fresh displays and a healthy spirit of rivalry prevails among their organizers.

There are many changes. Canada's display is even better than last year. It is going in very strongly for scenic effects, chief among which is a diorama three times the width of Drury Lane stage the biggest thing of its kind ever produced in the world; it has

movement throughout and over 2,000 lights are used to illuminate it. In addition to this big diorama there are twelve smaller ones, each representing a different phase of Canada's life and activities. The opportunities Canada offers to emigrants and merchants are amply illustrated, and emphasis is laid on the country's vast mineral and industrial resources.

Australia has reorganized, and there are many new and novel features in the Australian Pavilion. The presence of a dozen merino rams will be a source of great interest to agricultural visitors to Wembley, for this is the first time that merinos have been shown in England.

New Zealand has entirely altered the nature of her appeal, and has also introduced scenic effect to a much greater extent than was done in 1924. A typical scene from the New Zealand bush has been installed in the main hall, with a reproduction of one of its many beautiful waterfalls. In the North Court is a series of illuminated dioramas covering such well-known scenic attractions as the Wanganui River, the stalactic caves at Waitomo, the Alps of New Zealand, and the Fjords. Undoubtedly the chief attraction in this section is an enormous diorama of the thermal regions at Roturua. In this diorama are incorporated actual working reproductions of geysers, boiling mud pools and steaming cliffs, and visitors will obtain a very realistic idea of what these wonderful regions are actually like. Apart from displays of manufactured goods, which are entirely new, one bay in the South Court is devoted altogether to a magnificent collection of sporting trophies, including the finest collection of stags' heads in the world. Selling kiosks have been provided where visitors will be able to purchase and sample for themselves many of the products of the Dominion. The Cinema is again available to the public free of charge, and the supply of films is being considerably augmented with fresh material from New Zealand.

South Africa has improved its display in every particular. The mining exhibit has been enlarged, and the recent discoveries of platinum in the Transvaal give a topical interest to a representative exhibit of this metal.

The cotton and ostrich feather industries are emphasized by striking displays, and there will be regular demonstrations of South African cookery. No pains are being spared to make the South African gardens more attractive than they were last year, and special consignments of Cape wild flowers will be sent over throughout the summer. A new tea room in the Pavilion opens on to these gardens. Special attention is this year being paid to the sales side of the display, and arrangements are being made whereby visitors may purchase and have sent direct to their homes supplies of practically everything shown.

Southern Rhodesia has this year taken over a pavilion of its own near the South-West entrance. The pavilion is staffed entirely by men who have lived in Southern Rhodesia, and emphasis is laid on the attractions of the colony for settler and sportsman.

In the Gold Coast Pavilion greatly improved facilities have been provided for the public to see African natives pursuing their native trades under natural conditions. There are demonstrations of diamond washing and a display of native arts and handicrafts. It is hoped, too, to throw open the native compound to visitors during certain hours of the day.

Nigeria has several hundred feet of new scenic effects, and here, too, better arrangements have been made for the native workmen. A new type of palm-oil extraction machinery will be demonstrated, and there is a special room in which will be shown the uses to which native crafts may be put in British homes.

So it is with the others. Cyprus this year is housed in the Pavilion which Fiji occupied last year, and Palestine has taken over the whole of the joint pavilion devoted last year to Cyprian and Palestinian activities. Hong Kong devotes a larger section of its space to process workers and less to shops. It will again have a big contingent of British Chinese in residence during the course of the Exhibition. Malaya is extending its forestry exhibits, and will have a complete rubber factory at work. Ceylon again shows the work of Ceylonese jewellers in a wonderful display, and has a new section devoted to the arts, crafts and cottage industries of the island.

Newfoundland has this year an aquarium of its own, near which is a relief map showing the connections between Newfoundland and its foreign markets. The West Indies Pavilion has an open-air cafe in its tropical garden, where visitors may drink their planter's punch, Jamaica coffee and Trinidad chocolate in greater comfort. As a further attraction, India, Australia, New Zealand, South Africa, West Africa, Hong Kong, West Indies and Ceylon are running restaurants of their own, in which prominence is given to their own products.

Death of Lord Leverhulme.

Passing of A Great Captain of Industry.

London, 1st May, 1925.—Lord Leverhulme, (William Hesketh Viscount Leverhulme), who died on the 7th May, at The Hill, Hampstead Heath, from pneumonia, in his 74th year, was one of the great captains of industry of the last 40 years. To an intense energy he added an extraordinary power of initiative and system, and he conquered extraordinary difficulties. He had a hard struggle against well-equipped competitors but he guided his enterprise into smooth waters and then devoted his undivided attention to those developments which his active brain was perpetually planning. Born William Hesketh Lever, at Bolton, in Lancashire, on September 19, 1851, his father belonged to the old type of fervently Christian merchant, carrying on a large grocery business. When he was 20 he entered his father's business, but by the time he was 30 he resolved to start for himself. He opened a grocery shop at Wigan. After five years he had prospered so much that he was able to sell his shop for £60,000. All this time he had taken a great interest in soap, had read all the books he could procure on its composition, and had even experimented in manufacturing. Even before he sold his grocery shop he had bought at a low price a small factory at Warrington which was doing badly. He resolved to strike out a new line, and to introduce an entirely new soap, which he called Sunlight Soap, for he thoroughly realized that a good and attractive name was half the battle. The little factory at Warrington, which turned out only 20 tons a week, led in 1888 to the establishment of the great works at Port Sunlight, and later on to associated factories in Germany, Belgium, Switzerland, Australia, Canada, America—indeed all over the world, linked up with cocoanut plantations in the Pacific, with a chain of branch offices and selling agencies everywhere.

Lord Leverhulme believed that, even on the lowest ground of self-interest, it paid an employer well to consider the interests of his work-people; but Lever did much more for his employees than mere self-interest would have dictated. He was indeed an idealist, and he made Port Sunlight, with its profit-sharing schemes, its well-planned, picturesque houses and gardens, and its numerous social and sporting institutions, actually a model community in the full sense of the word. He was created a baronet in 1911, and was raised to the peerage in 1917, taking the title of Baron Leverhulme, a combination of his own and his wife's names. In 1922 he was advanced to a viscountry.

He had long had Parliamentary ambitions. After three attempts at Birkenhead he contested the Wirral Division in 1900, and secured the seat from 1906 to 1910. In 1917 he served the office of High Sheriff of Lancashire, and he was Mayor of Bolton in 1918. Edinburgh University gave him its honorary LL.D., the Royal Institute of British Architects made him an honorary Fellow, and he was a Grand Officer of the Belgian Order of Leopold II. Lord Leverhulme took a keen interest in art, and was a great collector of pictures, pottery, and old furniture. His public munificence was great. Most important of all his gifts was his purchase of Stafford House, which he presented in 1913 to the nation, together with much of its furnishings, for the London Museum. On Port Sunlight he showered many gifts, including the Lady Lever Art Gallery, in memory of his wife. In 1874 Lord Leverhulme married Elizabeth Ellen, daughter of Crompton Hulme of Bolton. He is succeeded in the title by his only child—the Hon. William Hulme Lever, who was born in 1888, and was acting Chairman of Lever Brothers, Limited. He is married, and has a son and two daughters.

The funeral took place at Christ Church, Port Sunlight, Cheshire, on Monday, May 11. The body was brought from London by motor-hearse on May 9 and placed in the Art Gallery at Port Sunlight. All house blinds were drawn, and touches of black marked the dress of all the inhabitants. When the coffin reached the village it was carried into the Gallery by members of the Works Fire Brigade, the small group of mourners including the Hon. William Hulme Lever, Mr. H. R. Greenhalgh (Vice-Chairman), Mr. C. W. Barnish (Managing Director), Mr. J. L. Ferguson (a Director), and Mr. L. V. Fildes (Secretary). During the night four firemen mounted guard over the body, and on the following day employees and visitors from Liverpool and other parts of Merseyside filed past the coffin. After the time for the admission of visitors to the Gallery that evening the coffin was taken to Thorntonhough, Lord Leverhulme's former home, whence it was borne on the morrow to Christ Church, Port Sunlight, for interment.

Industrial Notes from the West.

Air Routes to the East.

London, 15th May, 1925.—On May 8, at the Royal United Service Institution, Air-Marshal Sir Sefton Brancker lectured to the Central Asian Society upon "Air Routes to Asia" Sir Charles Yate being in the chair.

The lecturer first described what had been done in civil aviation since the war. All the nations, he said—Great Britain, France, America, Germany, and so on—were subsidized by their Governments, but this country had worked out a method peculiar to itself by which the Government loaned to a private company, Imperial Airways, a million pounds for ten years, this to be repaid gradually at the end of that period.

The short routes which Great Britain was at present operating were only a form of experiment: France, with her route from Toulouse to Casablanca in Morocco, and to Dacca in Senegal, was the only country running a real Imperial air route. Sir Sefton went on to explain the aircraft in use at the moment, and dwelt on the safety, the reliability, and the economy of the new method of transport. The longer the route, he pointed out, the better in every way. After describing the improvements that were steadily being made in aviation, and explaining the airship scheme, he turned to the East.

The East, he said, offered some different factors in flying from the West—both disadvantages and advantages. Among the former he included:—(1) Loss of "lift". At Baghdad, for instance, the destiny of the atmosphere in hot weather was .82 of what it was here in normal times, and that equalled a height of 3,500 feet, implying an increase of horse power, or of surface or of size of aerodrome; (2) Heavy rains. In Syria and Iraq, for instance, the rains reduced the aerodrome to bogs. In the Persian Gulf and in Central Asia generally, things were better, but at Calcutta and Rangoon it could be so bad as to force the use of boats, and aerodromes might have to be paved in the future; (3) The passage of high mountains; and (4) The difficulties of salvage. In Iraq, where the air trail had a track to guide it, it was easy enough, but in the Persian Gulf one might take three weeks to find assistance. Minor difficulties would be the housing and feeding of passengers *en route* to the East, capital expense, and the ventilation and comfort of cabins in a hot climate.

The advantages of the East, on the other hand, were:—(1) The weather, which ensured good and regular visibility. With this regularity, night flying would be developed; (2) The long distances over which there was no competition. He instanced the successful routes in Australia between Perth and Derby, and in America between New York and San Francisco.

Turning to the airship schemes for the East, Sir Sefton mentioned the work in hand at Ismailia and Karachi. This route would certainly develop—probably to Bombay, Calcutta, Rangoon, Singapore, and so to Australia. The weather was the all-important thing to study: the airship navigator always aimed to go a following wind, and it might be that he would go from Egypt to India mostly by sea, and return by the land route, *via* Baghdad.

After explaining the attempt of the Germans to run a line in Persia, from Enzeli to Teheran (they had lately given up the Moscow-Teheran route because the Russians were so hopeless), and the French effort across Europe to Angora (Turkey had recently inhibited France from running further than Constantinople), the lecturer sketched the air route to the East at present under consideration. From Baghdad one could either proceed down to Basrah and along the Persian Gulf to Karachi, or go through Persian territory—Isapahan, Kirman, Duzdap, Quetta—to India by the cooler route.

Sir Sefton, in conclusion, considered the problem in its Imperial aspect. The great failure of the British Empire lay in the fact that we had too great a population in Britain and too small one overseas. The antidote was to improve Imperial communications. Every form of transport was required to this end. Aviation could bring the overseas dominions nearer home, could quicken up the mails, and could make possible visits of investigation and negotiations which were impossible to-day. Our national prosperity was due to the fact that we were a nation of sailors: we must now become a nation of air-men. When once Air Transport paid without artificial assistance (as Mr. Henry Ford was already convinced it could pay in America), it would, he said, boom in every part of the world. Since we could not, as Sir Hugh Trenchard lately suggested, "abolish the air",

let us take the good things that aviation offered, and let us use it as a means of binding our Empire together more firmly.

In the subsequent discussion, Major Wood-Humphrey and Lord Winterton each testified to the need of Government and public assistance in the urgent task of developing our Imperial communications.

Power Alcohol from Cassava.

The Tariff Board has been requested by the Australian Commonwealth Government to investigate the claim recently made by a British company for a bounty on power alcohol manufactured from cassava and other starch-bearing crops. The company proposed to erect distilleries in the vicinity of selected sugar mills, and there carry on distilling operations (which could be undertaken by the ordinary staff) during the season when cane was not being crushed.

The Queensland Government is giving financial assistance to the scheme, the carrying out of which would, it was claimed, prove beneficial to the Commonwealth.

Its successful development would bring additional large areas of land under cultivation, and the local production of alcohol would stimulate industry in many directions.

Fuel Alcohol.

A memorandum prepared by Sir Frederic Nathan, the Power Alcohol Adviser to the Fuel Research Board ["Fuel for Motor Transport", Third Memorandum, H. M. Stationery Office, 9*d*. net], deals with the possibilities of using potatoes, mangolds, or Jerusalem artichokes for the production of power alcohol in this country. These are regarded as the only raw materials that could possibly be grown for the purpose in Great Britain or Ireland.

Potatoes.—As regards potatoes, the conclusion is reached that it is very unlikely that they could be grown at a price that would make it possible to obtain alcohol from them for use as an alternative to petrol at anything approaching its present price. One ton of potatoes produces 20 gallons of 95 per cent alcohol, so that every £1 it costs to grow a ton of potatoes is equivalent to 1*s*. on a gallon of alcohol for raw material.

Mangolds.—The mangold possesses several advantages over the potato as a raw material for alcohol. It is an easier crop to grow, harvest, and store, it is not so liable to disease, and as its carbohydrates are in the form of sugar the process of manufacturing alcohol from it is simpler. It is, however, very susceptible to injury by frost, and cannot be grown in the North of England nor in Scotland.

The yield of 95 per cent alcohol per ton, calculated on the average sugar content, is about eight gallons, so that every £1 it costs to grow a ton of mangold is equivalent to about 2*s*. 8*d*. on a gallon of alcohol for raw material. The average yield of mangolds per acre in Great Britain is, however, 9 tons, against 5·7 tons of potatoes, and the price is about £1 10*s*. for the former against about £7 for the latter on the wholesale market. Hence the cost per gallon of alcohol for the raw material would be 3*s*. 9*d*. if mangolds were used, against 7*s*. for potatoes.

During the three seasons 1920-21, 1921-22, and 1922-23 cultivation experiments were carried out at the Royal Naval Cordite Factory at Wareham, Dorset, with a French description of mangold, the "Betterave de Distillerie Blanche". The variety known as *a colet vert* gave the best results, and in the experiments gave yields for the three seasons respectively of 21·5 tons, 35·0 tons, and 16·4 tons per acre, the corresponding percentages of carbohydrates being 14·9, 10·1, and 10·5.

Artichokes.—For many years the Jerusalem artichoke has been recognized as a possible material for the manufacture of industrial alcohol. It will grow in almost any soil so long as it is well drained, and the tubers may be harvested and stored in the same way as potatoes, or may be left in the ground, if it is well drained, over the winter without fear of injury. To clear the ground completely of old tubers when harvesting is very difficult. Every small tuber or piece of tuber remaining over the winter under the soil will, as a rule, grow in the next spring, so that once the crop is planted and properly established on a piece of ground no replanting is really needed for many years, and the cultivation is reduced to a minimum.

From figures obtained during the war the average yield from field cultivation in this country was about 10 to 12 tons per acre, and yields of 95 per cent alcohol varying from 15 to 25 gallons per ton have been given. Some experiments made by the Department of Explosives Supply in 1918 gave a yield of 17½ gallons per ton. These experiments were continued in Dorset, and semi-technical scale working gave a yield of about 18·7 gallons.

Experiments were also made at the Royal Naval Cordite Factory on the production of butyl alcohol and acetone from the artichokes by means of an organism belonging to the

Bacillus butyricus group, and the results indicated that a yield of 12 gallons of the mixed solvents was obtainable. By the simultaneous fermentation of the tubers by yeast and the above organism a liquor was obtained consisting of 70 per cent of ethyl alcohol, 10 per cent of acetone, and 20 per cent of butyl alcohol.

The actual and calculated yields of the sun-dried artichoke stalks, as determined from the 1921-22 experiments, ranged from 2·09 to 5·4 tons per acre, with an average of 3.5 tons. Experiments have shown that by suitable treatment a pure resistant cellulose can be prepared from these stalks, the yield, calculated on the sun-dry ripe stalks, being about one-third of a ton per acre.

Power Alcohol from Beet.

It is not generally known that during the war the Germans ran most of their motor transport and aeroplanes on alcohol fuel, made to a large extent from sugar beet and other agricultural products. The British Power Alcohol Association states that there is no reason why this country should not be in a position to supply at least a portion of its motor fuel requirements, instead of being, as it is now, entirely dependent on foreign sources of supply controlled by powerful interests, and that if the expediency of granting a subsidy upon beet grown for sugar is accepted it is even more advisable to subsidize beet grown for power alcohol, which can be made in small distilleries spread all over the country, at a far less capital cost than that of sugar factories.

These distilleries, the Association states, would be capable of dealing with any quantities from 200 tons to 250 tons of beet per day, whilst sugar factories to be economic require to deal through the short season with a minimum of 1,000 tons to 1,200 tons of beet daily. To obtain this quantity it is necessary to draw supplies from distances anything from 15 miles to 20 miles from the factory, entailing railway cartage in addition to carriage on both the beet and the pulp, which the farmers require to be returned to them for feeding their cattle. By establishing small distilleries within a short distance of the area of supply, farmers can deliver the beets with their own horses and carts into hoppers at the factory, without handling, and return immediately with the pulp.

It is claimed by agriculturists generally throughout the country that they have as great a right to the advantages of the subsidy for growing beet in limited areas as in the selected districts of Lincolnshire, Norfolk, Suffolk, and Cambridgeshire, advantages from which they are now precluded because of the large minimum required to start a sugar factory. The subsidy, if extended to power alcohol, would be a great encouragement to the general farmer in all parts to keep a larger acreage under cultivation.

The British Power Alcohol Association, whose governing body includes, amongst others, President : Earl of Denbigh ; Vice-Presidents : Earl of Glasgow, Sir Lynden Macassey, Brigadier-General Sir Henry Maybury ; and Sir Edward Manville (Chairman of Council), and whose policy has the support of the National Farmers' Union and all the leading associations representing motor transport interests in this country, has set out to assist the establishment and development of the beet alcohol industry in this country. It is considered that in a few years, if the industry is assisted in the early stages, Great Britain should be able to supply from 30 per cent to 40 per cent of her present motor fuel requirements.

There is no intention of selling power alcohol as a substitute for petrol, but, as is the case with benzol, for mixing, after simple and inexpensive treatment, with petrol in any quantities up to 50 per cent ; the special value of the mixture being increased efficiency, cleanliness of the engine, smoother pulling power, elimination of "knock", and many other advantages with which owners of motor vehicles are familiar.

New Mills for Lancashire.

At a time when so much pessimism is being expressed about the Lancashire cotton trade it is refreshing to find that there are men in the industry with sufficient confidence to go forward with mill-building schemes. Already it has been definitely decided to proceed with the erection of two new spinning mills ; others are in contemplation ; and extensions are being carried out at quite a number of concerns. Certainly the men who are at the back of these mill-building schemes do not look on the black side of things, but, while agreeing that the trade has passed through a critical time, are of opinion that it has weathered the storm and that brighter days are in store.

Jamaican Silkworms.

The rearing of silkworms in Jamaica is, in the opinion of those who are advising the Colonial Government on the subject, likely to become one of the minor industries of the island. Financial assistance has been given by the Government during the past couple

of years for the building up of the industry, with the result that in various parts of the Colony plots of land have been planted with mulberry trees, while eggs for the production of silkworms have been, and are still being, imported from France.

Cocoons are being produced in Kingston and some other centres on a scale which indicates progress. A large mulberry plantation is to be established on the outskirts of Kingston, for in this centre it is claimed that the enterprise has passed the experimental stage. The operations are being directed by an expert from Syria, and machinery to separate silk from the cocoon has been ordered from France. Experiments have shown that mulberry trees can be grown in any part of the island.

Industry in India.

Major Salkield, late City Engineer of Delhi, speaking at the Conference of the Student Christian Movement, held in Manchester, said that, in considering the influence of those engaged in commerce, industry and the services in India, it was necessary to realize how little modern industry had affected the great bulk of the Indian population, only nine per cent of which lived in towns, compared with about 78 per cent in Great Britain. "A commission which had been collecting data in connection with industrial development in India had laid emphasis on the necessity for making primary education general, for fostering technical education, for creating a class of skilled artisans, for better housing and for welfare work among factory employees. The Government was expected to play an important part in all these matters; but, when the educated classes took as deep an interest in industrial matters as in politics, it might be expected that they would take them in hand themselves." Finally, the speaker emphasized the necessity for maintaining the personal prestige of the Briton in India, by continuing to send there only the best of our countrymen. "It was to this prestige and not to the power of the sword, that our successful rule in India was to be attributed: we had a noble heritage there, and to live up to the standard of their predecessors should be the ambition of all who went out to India from this country."

ndian Meteorology.

Sir Gilbert Walker, late Director of Indian Observatories, delivered a lecture on the meteorology of India before the Indian Section of the Royal Society of Arts on May 8. The lecture was illustrated by diagrams and photographs, without the reproduction of which it is difficult to do justice to it. The lecturer referred to "the economic and social relationships of meteorology, which in India are of exceptional importance, because rainfall affects the area of land which is placed under cultivation as well as the success of the crops; it affects the incidence of malaria and plague, and on these depend the population available for tilling the soil and working in factories. Thus, while it is essential for steady progress to learn by statistical methods what are the relationships between the factors controlling national well-being, it is clear that weather is one of the most important of them." He also mentioned that he had recently been trying to promote a scheme for cooling the air in large Government buildings: and had arrived at the conclusion that, "over the large part of India in which the air is dry during the hot weather, the process of cooling it by fifteen degrees would not be expensive if the necessary appliances were inserted when the building was erected. On entering the cooled premises it might be desirable to wear a light overcoat for a few minutes; but after that no difficulty would arise, and the circulation of fresh air at a moderate temperature adds considerably to mental activity. The cost would be but a small fraction of the salaries of the officers employed, except in regions where the air is damp and special arrangements would be necessary for drying it, like those which are generally employed in cotton mills."

A Bulletin entitled "Palms as a Source of Sugar in Hyderabad" by Mr. S. R. Bhate, B.A., B.Sc., has been issued by the Department of Industries and Commerce, H. E. H. the Nizam's Government, Hyderabad State. It contains the report of an officer specially deputed by that Department to investigate the methods in vogue for the manufacture of sugar from the juice of palmyrah and date palms in the Bengal, Bombay and Madras Presidencies. The conclusions drawn in the Bulletin are that palms are a potential source of a very substantial increase in the output of raw sugar in the State, and that this industry could be easily and economically developed as being a cottage industry requiring the outlay of very little capital and yielding a return which compares very favourably with that from sugar-cane.

Indian Economic Notes.

Insurance in India.

Notwithstanding the long predominance of oversea, principally British, insurance companies in India, indigenous concerns have grown to an extent somewhat remarkable in view of the prestige of their competitors. The report just issued of the Government of India Actuary for 1923-24 shows that there are 23 non-Indian companies operating in India, of which 17 are constituted in Great Britain, four in the Dominions and Colonies, and two in Shanghai. Indian life assurance companies have increased from 36 in the year 1916, with funds totalling 5·82 crores, to 45 companies, commanding 10.29 crores, in 1923. Whereas in 1923 the total life assurance income of the Indian companies was 1·26 crores it is now 2·48 crores. Thus, since the governing legislation was passed in 1912 both the total income and the total life assurance funds have approximately doubled. It is evident, the Actuary remarks, that very few annuities are now being granted. Furthermore, no dividend is now paid by any company out of its life funds except from profits ascertained by an actuarial valuation of its assets and liabilities.

Organization Expenses.

Of 53½ lakhs paid-up capital 18 lakhs have been absorbed in preliminary and organization expenses, and 6½ lakhs of the balance have been earmarked to meet deficits disclosed at the time of the actuarial valuations of assets and liabilities. The total sums assured remaining in force at the end of 1923 under ordinary life assurance policies issued by Indian companies amount to 40 crores. The new sums assured during the year were over 5¾ crores—a record figure—and more than three times as large as in 1916.

The outstanding defect in the working of Indian companies comes to light when the ratio of expenses is examined. According to the official analysis, although the expense ratio of the companies as a whole shows a slight improvement, yet there are unfortunately many companies which still conduct their business on very extravagant lines. Of the companies established in the past 20 years more than half are spending over 45 per cent of their premium income. It is noticeable, as the Actuary observes, how a high lapse ratio generally coincides with a high expense ratio. This is to be expected. If the expense ratio is high policyholders are apt to become dissatisfied and to let their policies lapse. This again tends to keep up the high expense ratio owing to the heavy expenditure involved in securing new policyholders to fill the gaps.

In his annual review of agricultural operations in India, the Agricultural Adviser to the Government of India points out that the area under improved varieties has increased within the relatively short period of 18 years from a few thousands to millions of acres. In 1923-24 there were, in fact, over 5,000,000 acres under improved varieties of crops originally isolated or evolved by the Agricultural Department—*viz.*, rice, 606,603 acres; wheat, 1,398,885; sugarcane, 50,604; cotton, 2,348,882; jute, 210,262; other crops, 467,146; total 5,079,382. If Rs. 10 per acre—a very conservative figure—be taken as the additional profit made from the adoption of these varieties, it is estimated that the annual value of the agricultural crops of the country has been enhanced by over 5 crores of rupees per year, or £3,500,000. "This", it is noted, "must be accepted only as a beginning, but it opens up a vista of great possibilities for the future. The good work already accomplished has won the confidence of the cultivator, and paved the way for a further advance."

The chief handicap now is lack of finance. Despite the high yield thus being secured from the outlay already incurred, while the Provincial Departments of Agriculture are restricted to a net aggregate outlay of a little over 70 lakhs, the Government of India, which in so many directions profits heavily from improved crops, restricts its grant to 8¼ lakhs only. Commenting on these niggardly grants, the Agricultural Adviser observes with perfect accuracy, but also with great restraint, that they indicate "that the claims of science to the greater support of the country and the function of science in economic development are not as yet fully realized in India."

Suggested Royal Commission.

A Royal Commission on Indian agricultural economics has been suggested, but a doubling of the present unduly limited grants to the various Agricultural Departments would be more to the purpose, writes a critic. The facts and the possibilities are known; it is necessary only to face the facts and grasp the possibilities. Means of securing larger yields and better quality have been evolved; but they need wider demonstration. When Indian Budgets are being

framed, officials, soldiers, and industrialists are capable of pressing their claims ; but to the mass of the agricultural populations the whole field of politics is *terra incognita*. Their neglect needs no other explanation.

Yet an increase in the average output per acre is really India's root problem. Only increased agricultural productivity can ameliorate the perpetual poverty in present conditions of the various Provincial Governments, and the Agricultural Departments represent the only effective agency. It is a plain business proposition. On the figures above quoted the Agricultural Departments are yielding India the economic equivalent of a dividend of 500 per cent per annum. On our railways we spend 30 crores per annum ; on improving agricultural production we spend less than one crore. There is room here for bold and rapid expansion ; other measures of economic improvement can wait, but this cannot wait. Whatever our objective be—primary education, better sanitation, or pure water supplies—the essential preliminary is " bigger crops".

Jamshedpur Technical Institute.

The Jamshedpur Technical Institute was opened by the Tata Iron and Steel Co., Ltd., towards the close of 1921. The Company has always recognized the necessity of training Indians to hold the superior positions in the works, especially in view of the increased plant which is now being brought into operation. No facilities for such tralning previously existed in this country, and the Company realized that, if men were to be trained, it would have to provide facilities for this from its own resources with such assistance as it might obtain from the Provincial Governments and the Government of India.

The Institute is probably the only example in India of a technical education which ensures satisfactory employment, in the industry for which the man is trained, on his completing the course satisfactorily. This ideal of technical training has very seldom been realized. The students of the Technical Institute, if their ability and application are statisfactory, are at once, on leaving the Institute, provided with suitable posts in the works of the Company. The Institute is supported by grants from the Governments of Bihar and Orissa, Bengal, the Punjab, Mysore, and by the Company. Applicants for admission are required to be under 22 and to have passed the Intermediate Examination of a recognized University, or its equivalent. The entire course is for a period of three years and consists of alternate weeks of class-room and mill work. Each student receives a stipend of Rs. 60 per month during the entire course.

So far, 15 students have completed their course of training at the Institute. Two of these, having been trained for the Mysore Iron Works at the expense of the Mysore Government, returned to Mysore. The remaining 13 have been employed by the Company in the following departments :—Blast Furnaces 4 ; Open Hearth, 3 ; Bessemer Converters, 1 ; Rail Mills, 3 ; Special Training, 2.

The Institute has attracted numerous students from all parts of India and the rigorous selection maintains a very high standard of efficiency. The number of admissions is limited by the number of men who can be recruited for superior positions in the works and by the size of the classes. During the current year the admissions were 23 and this number was selected out of 2,397 applicants from all parts of India.

The following figures show the applications of the current year :—Bombay, 204 applications—2 admissions ; Bihar and Orissa, 252 applications—8 admissions ; Bengal, 996 applications—6 admissions ; the Punjab, 274 applications—2 admissions ; Madras 317 applications—3 admissions ; United Provinces, 115 applications—1 admission ; Central Provinces, 57 applications—no admission ; Assam, 51 applications—1 admission ; Mysore, 17 applications—no admission ; Baroda, 19 applications—no admission ; Gwalior, 4 applications—no admission ; other Provinces, 96 applications—no admission.

Indians in Fiji.

An examination of the 1921 Census Report of the Indian community in Fiji reveals the fact that theIndian in Fiji is rapidly becoming a dominating factor in the commercial future of the land. In 1921 there were 3,878 Europeans in Fiji—an increase of 4·61 per cent in 10 years. The 60,634 Indians represented an increase of 50·51 per cent, whilst the 84,475 Fijians had decreased by 3 per cent. The average decrease of the native population during the previous 30 years had been 8 per cent. Everything points to the Indians and the Fijians being equal in numbers during the next few years. Of the Indian population, 26,810 or 40 per cent were born in Fiji. These have doubled their numbers in ten years. Happily the sex-disproportion is diminishing as this new generation grows up, but among those who hail from India, 69 per cent are males and 31 per cent females. It is to be hoped that the remnant of the iniquitous limitation of women to 40 per 100 men under

indenture will soon pass away. It is a little disconcerting to note in these post-war years the number of Punjabis who come at their own expense without their wives and children. They are fine hard-working fellows with much of the resourcefulness of the pioneer. Some give as their reason for leaving their wives in India that the women in Fiji have not a good name; others that they have only come for a few years in order to make money and then will return to the Punjab. So with Gujerati and other traders who come and go. Any such influx of males will not help to right the sex-disproportion. In Suva and its suburbs there are 4,532 Indian men but only 2,719 women. At the present time there are 10,000 fewer women than men between the ages of 15 and 45 years. Though India has 26,400,000 widows, in Fiji, of the total female population only 0·82 per cent are widows, says the report. The birth-rate in Fiji is 36 per mille or 4 per cent higher than in India. The death-rate is only 6.51 per mille as against 30.84 per mille in India. This may be largely accounted for by the fact that so many immigrants have returned to India in their mid-life. It is a startling fact to note that 50,929 or 76 per cent of the Indians in Fiji are under 40 years of age. This large proportion of young enthusiastic life makes the problem of their future the more important. The blind are very few in number as compared with India, only 1·47 per mille, and the imbeciles are but 1·70 per mille. The climatic conditions are remarkably healthy and the new generation shows an improved physique.

Unemployment in the Punjab.

The Board of Economic Inquiry in the Punjab have decided to make an inquiry into unemployment among the B.A.'s in the province and the member has been asked to submit a detailed line of inquiry for consideration at the October meeting of the Board. We await the result of this inquiry with much more than ordinary interest. For the problem of middle class unemployment is becoming almost appalling in its dimensions and is the cause of many a political ferment in the country. The case of B.A.'s is not much better than of failed B.A.'s and other failed candidates. The demand for employment is varying in inverse ratio to the market value of the applicant for employment. The Board have resolved further to make an inquiry into the earnings and conditions of unemployment of several classes of artizans. Other matters considered at the last meeting of the Board were the cost of education in the Punjab, the decay of the sugar industry in a part of the province and an inquiry into the organization of the railway workers and into factory conditions at Lahore. We do not anticipate that anything approaching complete success will attend the efforts of the Punjab Board. But the inquiries themselves are so important that whatever the results thereof they are likely to be found instructive far outside the province immediately concerned.

Indian Customs Revenue.

According to returns received in the Department of Commercial Intelligence and Statistics, the grand total of gross Indian Sea and Land Customs Revenue (excluding Salt Revenue) during the month of May, 1925, amounted to Rs. 3,55 lakhs as against Rs. 3,70 lakhs in the preceding month and Rs. 3,56 lakhs a year ago. The total revenue realized in the two months, April and May, 1925, was Rs. 7,25 lakhs as compared with Rs. 7,20 lakhs in the same period last year. Import duties contributed Rs. 5,60 lakhs; export duties Rs. 93 lakhs; excise duties on cotton manufactures Rs. 32 lakhs, on kerosene Rs. 18 lakhs and on motor spirit Rs. 15 lakhs; and land customs and miscellaneous Rs. 7 lakhs. Increases were noticeable in import duties on iron and steel, liquors, cutlery and hardware, silk piece-goods and Government stores; in export duties on raw and manufactured jute and rice; and in excise duties on cotton manufactures, kerosene and motor spirit. On the other hand, import duties on cotton yarn and piece-goods, tobacco, railway plant, metals other than iron and steel, sugar and match splints and veneers showed important decreases. The protective special duties collected on private imports during the two months, April and May, 1925, amounted to over Rs. 46 lakhs. The duties on Government stores including the protective duties collected amounted to Rs. 17½ lakhs.

Alcohol as a Drug.

Sir Leonard Rogers says in a recent contribution to the *Practitioner* that there is weighty evidence that the administration of alcohol as a drug in many of the most important tropical diseases is positively harmful. Agreeing with Sir Ronald Martin, he does not think that alcohol has any prophylactic value against tropical diseases. And he does not think either, that alcohol is necessary or beneficial in the tropics. Sir Leonard quotes the happy result in his own case of abstinence during 27 years of strenuous work in India with only one year spent in the hills, and with no complete year of leave, in spite of warnings from

advisers of the risk he was running. While he knows of no definite evidence that drinking a very moderate amount of well diluted alcohol after sunset, and only at the evening meal, does any harm, Sir Leonard Rogers infers from statistics relating to temperate climates that abstinence would result in longer life and less sickness in the tropics, and commends to the consideration of insurance companies a reduction to abstainers living in the tropics.

The Tariff Board.

The following Resolution (No.—5-T. (2), dated the 6th June, 1925) has been issued by the Government of India in the Department of Commerce :—The Government of India have received and considered the report of the Tariff Board called for in Resolution No. 38-T., dated the 10th April, 1924, of the Commerce Department on the application for protection received from the Magnesium Chloride Industry. They accept the finding of the Board that the applicants have not made good their claim for protection.

Economy in Public Expenditure.

In a recent issue the *Times of India* thus laid stress on the need of economy in public expenditure :—" We believe that a great change has passed over India. There may have been a time when it was impressed by display, sometimes on a lavish scale. Those days have passed. The pressure of life, especially on the middle classes, is so severe that the ideal of the time is a stern and unbending simplicity of life and conduct, and something approaching to penuriousness in the expenditure of the public moneys. People nowadays are not stirred by the occasional appearance of a scarlet-clad bodyguard, emerging from its retirement once or twice a year behind a carriage, nor by hands which are costly to a degree. They are powerfully influenced by an honourable poverty, such as that which Mr. Gandhi presents to his countrymen and which is the soul of the Servants of India Society. We can never go back to the old scale of public and private expenditure. The general rise in prices forbids it ; the advent of the motor car, necessary as it is in modern conditions, has added very many rupees a month to the budget of every householder. But we are convinced that the greatest appeal which this, or any other government in India, can make to public support is frugality and a regard for the revenue. The first example must come from the top. When Viceroys and Governors lead the simplest lives, and imitate the puritans rather than the cavaliers, it is easier for others to practise the same virtues. Concluding its remarks our contemporary rightly observes that the 'political' difficulties in India will be appreciably 'lessened' if for the impression that the present form of government is unnecessarily expensive 'there can be substituted the conviction that regard for the revenue is the supreme consideration of all in authority."

The Indian Trade Report.

Commenting on the " Review of the Trade of India in 1923-24," *Commerce* (Calcutta) says the most striking feature is the increase, by 50 crores of rupees (about 37 millions sterling, at the present rate of exchange) of the export trade : of which no less than 27 crores (about 20 millions) is attributed to the failure of the American cotton crop and to the large exports of raw cotton, at high prices, which resulted. The Director-General considers that complete trade recovery in India is retarded, in the main, by two factors—the unsettled European political conditions and the high prices that Indian importers secure for their goods in comparison with the prices that the Indian export trade can command. According to the report, India, in 1923-24, paid ninety per cent more than in 1913-14 for her imports while receiving only 45 per cent more from her exports. This is due to the expenses of manufacturing goods having increased, mainly on account of high labour charges, disproportionately to the increase in the cost of raw materials: a condition of affairs common to all primarily agricultural countries, and one that cannot be rectified by any economic formula. The cost of labour and the cost of raw materials are governed by widely different factors and to reconcile these at any given time is a task almost beyond the ability of man. On the whole the report is optimistic and suggests that the period of violent fluctuations has passed, and that "sober and steady alterations" may be expected in future.

The *Englishman* says that, reckoned on the values declared in 1913-14, despite the enormous apparent increase in value since that year, exports during 1923-24 were practically the same as ten years ago ; while imports are only about two-thirds of the 1913-14 figures : India's position being thus almost exactly the reverse of that of Great Britain. The wheat statistics shed an interesting sidelight on the change in the economic status of the inhabitants of a great area. In 1913-14 the production of wheat in India was 8,367,000 tons and the export 1,203,000. In 1923-24, while the wheat output had risen to 9,747,000 tons, export—

in a year when there was no restriction on exports—had fallen to 638,000 tons. In other words, there was a very definite increase in the local consumption of wheat, due to a rise in the standard of living among the population. "More than any province in India, the Punjab played a full part in the War. Hundreds of thousands of recruits joined the army, and the people as a whole received extremely good wages and good prices for their products. In a microcosm, as it were, the Punjab reproduced the conditions in Britain, and to some extent the results have been similar."

The report mentions that the production of yarn in Indian mills is the lowest on record—608 million pounds as compared with 706 million in 1922-23. Owing to their inability to compete with the cheaper Japanese yarns, Indian mills were hampered by an accumulation of stocks. The total weight of raw and manufactured jute exported increased by 12½ per cent but the value showed a fall of 1 per cent.

The Hide Trade.

The *Statesman* (Calcutta) says that, of all forms of Protection, the least logical is that of imposing an export duty. In the rare instances where a country enjoys a world monopoly of a particular product, an export duty may yield revenue without reducing business, but such a position scarcely ever exists. When the export duty on hides was imposed in 1919, the Minister responsible stated that India monopolized the hide and skin trade of the world. That this was a complete miscalculation has now been admitted by the present commerce member of the Government of India, who, in the Legislative Assembly in 1923, characterized "this unfortunate export duty" as "one of the worst mistakes that the Government of India ever made". Its result has been that, from the pre-War position of the largest exporter of hides in the world, India has fallen to that of a secondary market, and the world's prices are now dictated from other quarters. India's export of raw hides and skins in 1913-14 was 80,000 tons; in 1919-20, the year in which the export duty (15 per cent *ad valorem*) was imposed, it was 89,000 tons; and, in the following year it dropped to 30,000 tons. This was its low water mark, for it rose, the next year, to 47,000 tons, a figure at which it has remained fairly constant ever since, in spite of the reduction, in 1923, of the duty to five per cent. But, even so, this is little more than half of the pre-duty figure, so that it appears that the evil effect of its imposition is permanent.

The Indian Post Office.

A correspondent, writing to the *Pioneer*, says that the Indian post office carries 1,200 million articles a year—about four per head for the entire population of India, in about a week for each person who can read and write. A comparison of the number of literate persons and the number of postal articles in each Province gives the curious result that the postal circle of Sind and Baluchistan stands first—every literate person in that circle is responsible for 145 postal articles a year. The Punjab is second, with 140: and Bombay third, with 111. There is then a heavy drop to 75—the figures for the United Provinces; while, in spite of the enormous correspondence to and from Calcutta, the postal circle of Bengal and Assam stands no higher than sixth, with 52 postal articles a year for each literate person. Last on the list is Burma, which is curious since the proportion of literates in Burma is definitely higher than anywhere in India. The fact is, says the writer, that the Burman has not yet realized the reliability of the post and either carries his letter himself or entrusts it to any friend who happens to be going in the direction of the addressee.

Figures relating to the Canadian pulp and paper industry (one of the most important industries of Canada) issued by the Dominion Bureau of Statistics, are given below. The net value of production for the industry in 1923 was $183,226,218, there being 110 mills in operation. The pulp wood exported increased from 25.8 per cent in 1922 to 29.8 per cent in 1923. The total capital invested in the industry in 1923 was $417,611,678, an increase of 9.6 per cent over 1922. The total number of persons employed on salaries and wages in the industry in 1923 was 29,179, with a pay roll of $38,305,157, as compared with figures for 1922 of $25,830 and $32,918,955 respectively. Of the total number of employees, 379 were females on the clerical staff. 10 were female technical experts, and one was a salaried officer. There were in all 209 salaried officers, who received for the year the total of $1,731,250; 238 superintendents, who received approximately $1,500,000; 356 technical experts, who received a total of $870,586; 1917 clerks, who received a total of $2,956,344; and 26,359 employees on wages, who received a total of $31,235,961.

The Mysore Economic Conference.

Sir A. R. Banerji's Address.

[*The following is the Address delivered by Sir Albion Rajkumar Banerji, Kt., C.S.I., Dewan of Mysore, in opening the Mysore Economic Conference, on 4th June* 1925.]

In June last year, I had the privilege of inaugurating the first Economic Conference after its reconstitution under the Proclamation of His Highness the Maharaja, and to-day I have the pleasure of welcoming you to this, the first annual session, on the completion of one year of work under the new arrangement.

During the year, the three Boards of Agriculture, Education, and Industries and Commerce took up definite programmes of select subjects for study and investigation. Separate Sub-Committees have also been formed for special investigation of the several groups into which these subjects have been classified. The meetings of the Boards as well as of the Sub-Committees have been very well attended, and it is a matter of gratification for His Highness' Government to observe the close and continuous attention which has been brought to bear upon the several questions dealt with by them. The scope of work of these Boards after reconstitution has been mainly deliberative and advisory, and I wish to express the thanks of His Highness' Government for the several practical suggestions given by the Boards from time to time during the year.

Agricultural Distress and Floods.

Before I proceed to give you a brief account of the work of the various Development Departments and of trade conditions in Mysore, I must not omit to mention the crisis through which we passed at the beginning of the official year from the effects of a partial drought in the three districts of Bangalore, Kolar and Tumkur, and of unprecedented floods in the districts of Mysore, Kadur, Shimoga, and parts of Chitaldrug and Hassan. Government not only undertook relief measures on an extensive scale, but also granted suspension and remission of the normal demand of revenue. The measures adopted for relief consisted of special grant of takavi loans, gratuitous monetary relief, free grant of village sites and timber for building houses, and the provision of suitable work to the agricultural classes. The disbursements on account of the various measures came to nearly Rs. 10 lakhs, of which Rs. 4 lakhs were under takavi loans.

A very gratifying feature of the operations conducted last year was the voluntary co-operation of several non-official gentlemen and local bodies with Government in rendering help to the sufferers, both at the time of the floods as well as in the work of reconstruction. A strong Central Committee, consisting of important official and non-official gentlemen, was constituted under the distinguished presidency of His Highness the Yuvaraja, for raising subscriptions and distributing relief. District Committees were also organized in the affected parts to be in direct charge of the relief measures. As a result of their efforts, a sum of Rs. 1,11,000 was raised by public subscription, of which a sum of Rs. 61,000 has already been disbursed in the four districts that were affected.

Trade Conditions in Mysore.

In my last year's Address, I gave you a brief review of the trade and industrial conditions in Mysore and traced the cause which affected them generally. There has been no improvement in the depression that has characterized industrial and commercial conditions everywhere since the year 1922. Our industries have been passing through a still more critical and anxious period during the last year, chiefly due to the prices of several commodities having shown a further tendency to fall. This, combined with the rise in the cost of raw materials, has left very little margin of profit even in the case of well-established industries. The conditions of the money market have not improved. I drew your attention also to the fact that the balance of trade in the State has gone against us for quite a number of years. The detailed examination of this question has been referred to the Board of Industries and Commerce by Government in December 1924. I understand that the Board have formed a Sub-Committee to discuss the question with the help of those actively interested in trade, and I am awaiting with keen interest the results of their enquiry before taking any further action in the matter. Let me give you in this connection a few statistics of last year's trade in Mysore. Viewed merely from the point of excess of the total exports over the total imports, the balance of rail-borne trade, which had gone against Mysore to the extent of Rs. 178 lakhs in 1922-23, has turned in favour of the State to the extent of Rs. 75 lakhs in the year 1923-24. These results are due more to the decrease of imports of commodities like salt, sugar, piece-goods, coal, machinery and provisions than to any improvement in our exports, which have remained stationary. The total value of trade has remained almost the same as in the previous years, being Rs. 26·52 crores against Rs. 26 crores in 1922-23 and Rs. 27·35 crores in 1921-22. Deducting the figures relating to the export of gold and applying tests similar to those indicated in my last year's Address, the condition of Mysore trade continues to be unsatisfactory. Another matter to which I may again draw your attention is that the bulk of the trade still remains in the hands of outside middlemen. To take only one instance, large quantities of piece-goods are usually imported into Bangalore, from which they are exported to various centres. This export rose from 9,000 maunds valued at Rs. 4,94,000 in 1913-14 to 43,667 maunds valued at Rs. 113 lakhs in 1922-23. A good deal of the finance for this trade is provided also from outside capital. It has been estimated that the profit derived from all such transactions amounts to nearly a crore of rupees. There is a great scope for organizing a large number of local trading bodies to serve as purchasing and distributing mediums.

Middle Class Unemployment.

As observed by me last year, the unemployment problem among the educated middle classes in Mysore is growing in volume and acuteness year after year. A large number of University men are seeking appointments in Government service without any success, and are remaining idle at home. The solution depends to a large extent, it seems to me, upon the absorption of this class of young men into the agricultural and commercial activities of the State. I invite, in this connection, your special attention to

Sir Alfred Chatterton's paper recently read by him in London on the Industrial Progress of Mysore, and also to Sir Gangaram's evidence before the Economic Inquiry Committee, in the course of which he forcibly brings out the imperative need for a return back to the land, of our educated youth, adopting improved methods of agriculture and other modern methods of economic development with the aid of Science and Industry. As pointed out in one of the leading Indian daily papers, "The one evil in our social and economic life is the progressive decay and disintegration of village life and the correspondingly excessive overcrowding in urban areas, which demand the same remedy of 'back to the villages'." But this call back to rural areas will, I fear, remain a cry in the wilderness for some time, till competition and struggle for mere existence change the whole mental outlook in regard to the dignity of labour and the glamour of Government service.

Development of Industries.

In spite of the depressing causes which have affected our industrial conditions, there has been a fairly steady advance during the year in launching new concerns with capital varying from Rs. 10,000 to Rs. 1,00,000. The total amount invested in the concerns started in the current year is Rs. 5 lakhs. The concerns relate mainly to the installation of Anderson oil expellers, rice mills, coffee hullers, pumping installations, and a number of other miscellaneous industries. The amount invested in the purchase of gas, oil and steam engines is over Rs. 2 lakhs. The only important large industry started during the year is the Mysore Match Manufacturing Company, with a capital of Rs. 20 lakhs, of which shares to the extent of Rs. 5 lakhs have been issued. The Minerva Mills have completed the erection of machinery and started work with 20,000 spindles. This brings our cotton mills to a total number of 4, with 1,30,000 spindles and 1,800 looms between them. The output of our yarn during the last three years has risen from 48 lakhs to 68 lakhs of pounds, and there has been a corresponding increase in the production of cloth from 24 lakhs to 38 lakhs of pounds. The textile industry, however, is passing through a serious crisis all over India—but some of our local mills, both cotton and woollen, have done fairly well. The dullness of trade affected the hand-loom weavers also, whose production is said to have fallen by 20 per cent. A certain amount of help was given to them by means of takavi loans by the Industries Department. The total amount for which loans were sanctioned during the year was about Rs. 39,000. Very little advance has been made in respect of the sugar industry scheme, although Government have offered suitable concessions in this direction.

Development in Education.

In regard to Education in the State, the period under review has not been one of extensive development; but it has been one of steady progress on the lines already laid down in the orders on the Educational Memorandum. The education cess is now being levied in 5 out of 8 districts and the total sanctions from the Cess Fund, since its levy up to date, amount to an annual recurring expenditure of Rs. 2,52,000. In addition to this, a sum of Rs. 2 lakhs has already been sanctioned out of this fund for buildings and equipment. As a result of action taken for utilization of the cess, 52 Incomplete Middle Schools have been converted into Middle Schools, 738 Aided Primary Schools into Government institutions, and the staff of 147 schools has been improved. One hundred and fifty new Primary Schools and 24 Practical Instruction classes have also been opened in various centres. There are, however, very difficult problems facing us in respect of mass education and vocational training, which are chiefly concerned with finance. We have a veteran educational expert amongst us as President of the Board of Education, whose great experience in regard to these questions is sure to stand us in good stead in working out all future development measures. But propaganda work amongst the rural population is very necessary to create local resources to augment State aid, specially for primary education. The University is crying for self-expression and expansion, and if Mysore is to lead the way in University education, we have to meet all legitimate demands for its expansion on right lines, to increase the earning capacity of the young products of the University and to open out for them directly or indirectly new avenues of employing their talent.

Agricultural Department.

In the Agricultural Department, the most noticeable work during the year related to the spraying operations against *koleroga*, which were carried on in 7,500 acres and resulted in a saving of crop estimated from 10 to 15 lakhs of rupees. The work has a very pronounced effect upon the economic condition of the Malnad raiyat, and in a few years the operations are expected to cover the whole field affected by the blight. Various other experiments for the investigation of diseases which are common to our crops and for the manuring of our principal crops were carried on in the laboratories of the department, with very promising results. The department was also engaged on the work of distributing improved seeds and agricultural implements. It is estimated that over 15,000 acres are under improved strains of ragi, 1,500 acres under improved cotton, 5,000 acres under improved varieties of sugarcane and 25,000 acres under improved varieties of groundnuts. The experimental farms in charge of the department also worked satisfactorily. The Kolar Sheep Breeders' Association has increased its membership to 140. Another striking result which has been achieved last year was the utilization of the co-operative societies and local bodies for the distribution of agricultural implements, seeds and manures. I am glad to see that the District Boards are evincing great interest in the work of agricultural development, and are setting apart funds for this purpose.

In the Department of Sericulture, the extension of acreage under mulberry has been maintained. A Sericultural Conference was organized recently by the Bangalore District Board, with great success. In this connection, I must refer to the phenomenal fall in the price of silk, amounting to nearly 30 per cent below the normal level. The present depression, if it continues for long, may result in a contraction of the acreage under mulberry cultivation and may cause a serious set-back to this important industry.

Miscellaneous Items.

Other outstanding items of public interest are the starting of work on the Nanjangud-Chamarajnagar Railway and the scheme of the VII Installation at Sivasamudram. The loan raised for the former was, I am glad to say, over-subscribed, and it is a matter for gratification that the major portion was contributed by subscribers within the State. The further extension of our hydraulic schemes will bring the total power generated to 46,000 H. P. The gross receipts will be improved to the extent of Rs. 18½ lakhs, which will be immediately available for adding to the general

resources of the State. The Stores Purchase Committee, which has now been working for 18 months, transacted business amounting to roughly Rs. 42 lakhs. The savings effected by a system of extended advertisement and wholesale purchase in the best markets, under a system of competitive tenders, is estimated at nearly Rs. 3 lakhs. This Committee is also endeavouring to encourage local manufacturers, wherever possible, as part of the Government policy. As regards the work on the Krishnarajasagara Dam, the programme sanctioned in September 1924 has been kept up and all works necessary to divert the flood waters over the permanent waste weir are approaching completion. The central part of the dam will be raised to 106 feet from its present level of 80 feet, and a part of the additional storage thus made available will be used in connection with the VII Installation at Sivasamudram, for generating an additional 14,000 H. P. The balance will be utilized for encouraging sugarcane cultivation and hot weather manurial crops under the existing canals. The development of this tract deserves closer study, for, with a more economical use of water and the raising of commercial crops, the raiyats will get a fuller benefit from the irrigation which is now provided by the storage.

I may, on this occasion, be expected to say a word or two about the affairs of the Mysore Bank and the Sri Krishnarajendra Mills, brought into existence by the direct efforts of the Mysore Government. In regard to the first, it is not to be expected that its internal management should be subjected to any interference by Government. But they have a responsibility to discharge, and I wish to say on behalf of Government that they intend to discharge that responsibility to its fullest extent. They have had a conference with the managing authorities of the Bank, and it is hoped that all just criticisms, if any, in regard to the Bank affairs will be listened to with respect. The public should not at the same time be led away by vague rumours and alarming reports. I am glad to see that the affairs of the Sri Krishnarajendra Mills have been fully discussed by the shareholders at their last meeting, and it is proposed to obtain the services of an expert for advice generally on the affairs of the concern. Government have watched with sympathetic interest the development of this concern and if, after proper enquiry and investigation, they find it necessary to come to its aid, Government will not hesitate to take such action as they deem necessary. It is, however, hoped that nothing will be left undone to improve the prospects of this concern in the near future.

In the brief summary given above, I have attempted to lay before you the principal items of work on which our Development Departments have been engaged during the last year. In order to devise suitable measures for encouraging the economic growth of the people, a fairly accurate estimate of existing economic conditions is an essential preliminary. Our present methods of collecting statistics of cultivation, crops, wages and trade, are capable of considerable improvement. Recently, the Government of India, in pursuance of a Resolution in the Legislative Assembly, have appointed a Committee presided over by our ex-Dewan Sir M. Visvesvaraya for devising methods of economic enquiry, and their findings will be of considerable value to us in this direction. Similarly, the inquiry regarding the problems of taxation in British India, which is being conducted by another Committee, will yield valuable material for our guidance. Meanwhile, we have not remained idle. An economic survey of a few typical villages in the Malnad is now being conducted by a Special Officer, of which a preliminary report has already been received giving interesting information about the state of cultivation, various land tenures, debt, problems of labour, and other topics. The investigation when completed, will, I hope, be of some value in arriving at definite lines of work for the further improvement of conditions in the Malnad.

Future Outlook and Policy.

Although the period we are passing through is one of general depression in trade and industrial enterprise, there is no cause for discouragement and it may be permissible on this occasion to determine, however roughly, our future programme and possibilities. In regard to trade in food grains, I must emphasize that the most noticeable change during the last few years is in respect of our position as a food-producing country. The imports of rice by railway have risen from 7,30,000 maunds valued at nearly Rs. 40 lakhs in 1913-14 to nearly 16 lakhs of maunds valued at Rs. 124 lakhs in 1923-24. The increase in the import of foodstuffs has not been made up by a corresponding increase in the exports of the other agricultural and commercial crops, though there has been improvement in the export of cotton, oil seeds, jaggery and silk. I am aware that these figures relate only to rail-borne trade, and do not show our position as a whole by taking into computation the Malnad trade in the important products of paddy, coffee, cardamom, areca and jaggery and the exports of silk to Kollegal by road. But the figures show that the question of increasing food production in the State is one of great importance, and though it has received special and continuous consideration at the hands of Government for the last three years, the results achieved have fallen short of our expectation. Action has already been taken in this direction by throwing open a number of Amrut Mahal kavals and date groves for cultivation, and more than 50,000 acres have already been disposed of. Although the area under occupation has increased, the area cropped for the last ten years does not unfortunately show a corresponding advance. The limitations retarding the growth of food production in Mysore require to be more closely examined. I think they relate chiefly to the want of resources of the average agriculturist, the inadequate facilities for irrigation so necessary in a plateau country, and want of industry and care in the methods of cultivation, selection of seed, etc. Government should be able to supply the needs in many of these directions, but the average raiyat has to be educated up to level, making it possible for him to appreciate the measures undertaken by Government. Practical education in agriculture, agricultural co-operative movement and larger assistance through Government, to agriculturists by way of loans and advances, may possibly solve some of the difficulties.

Gentlemen, the industrial outlook in India changes from day to day. Conditions are affected by the world's economic struggle. The aftermath of War still continues, creating a general dislocation of business and artificial conditions of production. Mysore has a wealth of raw materials and, I believe, it has also capital and enterprise. What it requires is a band of commercial men of good business methods and of technical men scientifically trained in different branches of industries; and efforts have yet to be made to see that these two meet and make the best

use of each other. Now, one is divorced from the other, or, while one exists the other is yet to come into being. The Bhadravati Iron Works with its foundry developments may create new openings for the profitable use of the pig iron manufactured in the State and in South India, so as to utilize it for finished and specialized products now generally imported. The Mysore State is in need of larger transport facilities for a greater development of its trade and commerce and must have its legitimate outlet to the sea on the western frontier. The raw materials which are in abundance have to be exploited with scientific knowledge and skill and the best brains of the country should be trained to take up the work. But the difficulty always is to utilize their services after training, the general tendency being to seek a Government appointment. At present, the salvation lies in the private capitalists combining and forming Joint Stock Companies with subsidies from Government and other State aid, and a scheme for the employment of our trained young men in such companies may be formulated. There are now, I fear, many so trained who have not found any kind of opening for themselves. The Art industries in the State, which are declining due to the antiquated methods of the workers, should be assisted to turn out articles showing better skill and attracting ready markets. The development of the mineral resources of the State, such as chrome and manganese, have been haphazard, but future exploitation should be more systematic, and carried on for the mutual benefit of the State and of private enterprise. The idea of forming an Association to co-ordinate activities under private enterprise in these directions has been, I am glad to say, recently carried out. The silk industry is capable of considerable improvement, not only in the direction of producing raw silk in the State but of developing an extensive outside business by improved methods of reeling. There is considerable room for the improvement of the silk industry of the State, both as regards the class of fabrics as well as the quality of work. The industry in hides and skins may be better organized, so as to promote the manufacture of the goods in a more finished form. The commercial possibilities of a large variety of our minor forest products have yet to be developed.

I have generally and rather vaguely indicated some of our present problems ; and, had I been in a position to indicate a definite scheme of State subsidies and State aid now, I would certainly have put up for your consideration a few particular lines of development : but Government have now their hands quite full and have no margin of funds to make new experiments. Hence, I appeal to the people to keep the home fires burning in spite of the present trade depression, and come forward at the earliest opportunity with proposals for developing Mysore in every possible direction so that education, which is spreading, may prove a real boon to the country and be devoted to the pursuits and endeavours which will go to increase the economic wealth of the country.

Gentlemen, I have already kept you long. The programme of work which you have set before yourselves for consideration in the current and next years is a long and arduous one. But I have no doubt that you will bring to bear upon it the same patient spirit of inquiry and practical decision which has characterized this Conference ever since its inception and made it the invaluable ally of Government for the economic uplift of the people.

Punjab Board of Economic Inquiry.

The following is a summary of the Proceedings of a Meeting of the Board of Economic Inquiry, Punjab, Urban Section, held in the Financial Commissioner's (Development) Room, Lahore, at 11-0 a.m., on Tuesday, 28th April 1925 :—

1. The minutes of the Proceedings of the previous meeting held on the 21st October 1924, were taken as read and confirmed.

2. The Honorary Secretary reported that the Joint Board had allotted Rs. 7,000 to the Urban Section for the present year.

3. The scheme of work for the present year was fully discussed, and it was agreed that a beginning should be made with the following inquiries :—

(*a*) Cost of Education in the Punjab : A questionnaire for this inquiry is already well in hand. Mr. Garbett agreed to have this completed in time for circulation to members before the October meeting and to make a preliminary inquiry in the Attock District.

The Board sanctioned any incidental expenditure in connection with this inquiry.

(*b*) The Decay of the Sugar Industry in the Jullundur Doaba : The Board appointed Lala Mulk Raj Bhalla to draw out a questionnaire for this inquiry in time for circulation to members before the October meeting.

(*c*) An inquiry into the Organization of the Railway Workers in the Punjab, with special reference to the Strike : The Board appointed Mr. Abel to undertake this inquiry and sanctioned expenditure, up to Rs. 200. No action will be taken on this till after the October meeting.

(*d*) An inquiry into the Earnings and Conditions of Unemployment of Artisans of the following trades : Blacksmith, Fitter, Carpenter and Bricklayer. The Board appointed a Sub-Committee comprising Mr. Scott, Mr. Abel and the Honorary Secretary, to draw up a questionnaire for consideration at the October meeting.

(*e*) An inquiry into Unemployment amongst the B.A.'s in the Province : The Board appointed L. Vishnu Dutta to submit a detailed line of inquiry for consideration at the October meeting.

4. The Honorary Secretary reported the resignation of Dr. Curjel Wilson, a member of the Urban Section of the Board.

5. Mr. Garbett promised to submit his recommendations on the report on Factory Conditions in Lahore before the October meeting.

6. L. Mulk Raj Bhalla undertook to submit a short note on the inquiry he had undertaken into the Earnings of Tongawalas.

7. The Urban Section adopted the resolution of the Rural Section of the Board with regard to Travelling Allowance and Halting Allowances for Members attending the meeting from outside Lahore. (*Vide* Rural Section Proceedings, dated 4th April 1921, para 7.)

8. Mr. Abel undertook to act as Honorary Secretary of the Section during the summer months.

H. P. TOLLINTON,
Chairman,
Urban Section,
30*th April* 1925.

W. H. MYLES,
Honorary Secretary,
Urban Section.
30*th April* 1925.

Books in Brief.

Short Reviews of Recent Books.

The Early History of Bengal.

By F. J. Monahan, late I.C.S. With a Preface by Sir John Woodroffe, B.C.L., formerly a Judge of the High Court, Calcutta. Published by the Oxford University Press, London, Bombay and Madras. Price 15*sh.* net.

A pathetic interest attaches to this work which is in every sense a brilliant production. Its author, if he had not died suddenly, would have soon attained the high distinction of a Historian of India. Though a fragment, the present work is, in one sense, a complete one. It shows the author's capacity for work of this kind. His careful study of materials, his thorough grasp of authorities, and his judicial impartiality in dealing with disputed points are imprinted on each line of his production. Mr. Monahan's death will, therefore, be widely lamented by every lover of India. Though his present work is called "The Early History of Bengal", it really covers a much wider field, though not inappropriately—for the history of Bengal, as the author correctly points out, is merged in that of Bihar and of the Maurya dynasty during its earliest times of which there is any record. In treating of the Maurya period, Mr. Monahan has struck a new vein of research. His tracing back Asoka's administration, in its details, (with their distinctive names, etc.) to what is stated in the *Arthasastra* of Kautilya is particularly noteworthy. It is a line of work that will repay further attention. It strengthens the position of those who claim for the *Arthasastra* an antiquity as old as Chandragupta. Some of Mr. Monahan's interpretations are highly suggestive. Though he often differs from well recognized authorities, the reader feels he has made good his reasons for the independent view he takes. His work is altogether a contribution to the study of the Mauryan times—especially of the times of Chandragupta, Bindusara and Asoka. His study of the evidence derivable from Greek writers and from the *Arthasastra* will, we feel sure, be along referred to with respect by future writers on this period. It seems a calamity that so promising a student of Indian History should have been lost just as he was on the threshold of his life's work.

Survey of India—General Report for 1923-24.

Prepared under the direction of Col. E. A. Tandy, R.E., Surveyor-General of India. Printed at the Photo-Litho Office, Survey of India, Calcutta. Price Rs. 2 or 3 *sh. 6d.*

The work of the Survey of India is done silently by intrepid workers. Its work is of the most important and useful kind. It is, therefore, a necessity that the public should know what is being done by this Department from year to year. From a table given in the Report we note that the outturn of topographical survey during the year 1923-24 was 65,673 square miles; and that this brings the total progress since 1905 to 753,890 square miles, leaving 1,067,710 square miles still to be done. Among the main events of the year may be mentioned the undertaking of Aero-photo Surveys in the Irrawaddy Delta and in Waziristan; the despatch of surveyors to accompany the Deputy Commissioner to Naga Hills, the Mount Everest Expedition and the Chitral Reliefs; and the holding of a Conference in October 1923 and in April 1924 to discuss the question of co-operation between the Royal Artillery and the Survey of India in peace and war. We note that the Trigonometrical Survey of the Survey of India is now designated the Geodetic Branch of the Survey of India. During the year Col. C. H. D. Ryder, C.B., C.I.E., D.S.O., R.E., who had administered the Department to about the end of March 1924 proceeded on leave preparatory to retirement. A summary of his distinguished services to the Department is appended to the Report. We note No. 7—of the Southern Circle—was engaged in survey work during the year in parts of the Mysore State. An excellent photogravure likeness of Col. Ryder forms the frontispiece to the Report, which bears eloquent testimony to the valuable, though silent, work done by the Department during the year under Report.

Stevens' Mercantile Law.

7th Edition. By H. Jacobs, B.A., Bar-at-Law. Published by Messrs. Butterworth & Co., London, Calcutta and Madras.

This Edition of "Stevens' Mercantile Law", which is one of the standard books included in Butterworth's "Commercial Law Series" is an improvement on the previous edition, especially from the point of view of students. Mercantile Law is increasingly studied in this country by students at the present time, owing to the greater demands made on commercial and banking office clerks and assistants for a sounder knowledge of the general principles underlying every-day procedure in their respective Departments. Mr. Jacobs' work is conveniently divided into five parts, dealing with the Law of Contracts, the Rules relating to parties to Contracts, Rules relating to the subject matter of Contracts, Bankruptcy and Arbitrations. The treatment of each part is both clear and lucid. The legal principles are throughout stated in a perspicacious manner. The Appendix sets out the latest law pertaining to Patents, Trade Marks, Merchandise Marks and Copyright. A copious Index and full Tables of Statutes and Cases cited add to the utility of the book as a ready book of reference. Whether for the student or the man of Commerce who in these days has need to know the law, the book ought to prove of immense value. The fact that the book has passed through *six* editions proves its worth. Good vine verily needs no bush.

Acknowledgments.

(1) *Lists of Manuscripts.*—Collected for the Govt. MSS. Library. By the Professors of the Deccan and Elphinstone Colleges since 1895 and 1899. Compiled and published by the MSS. Department of the Bhandarkar Oriental Research Institute, Poona. [Introduction in English and Contents in Sanskrit. Its utility would be greater, if Contents were also in English—or at least bi-lingual.]

Backward Classes and Government Service.

The Government of Bombay in furtherance of their policy of securing the fair representation of all castes and communities in the public services have prescribed a minimum percentage of recruitment from members of the Backward Communities to the clerical staff of all Departments in the Presidency proper. The schedule attached shows against each locality the classes which are considered by Government to be advanced within that locality and the prescribed minimum percentage of recruitment to the clerical staff from members of communities other than those so mentioned. The standard of qualification is to be the same for all candidates; but appointments are to be made so as to secure a minimum recruitment of *at least* the percentage shown in the final column.

The percentage shown is a minimum and should not prevent recruitment above that minimum, where a sufficient number of well qualified candidates is forthcoming to make it possible, having due regard to efficiency, to select a higher number, with a view the sooner to render the prescribed percentages the minimum representation of Backward Communities in the clerical staff of all Departments in the Presidency proper. The minimum should include a fair proportion of Mahomedans in the Presidency proper, and in Sind should be 50 per cent Mahomedans with a view to the eventual representation of at least that percentage of Mahomedans in the clerical staff of all Departments in Sind.

SCHEDULE.

Locality	Advanced Communities	Minimum Percentage of Recruitment from Backward Communities	Locality	Advanced Communities	Minimum Percentage of Recruitment from Backward Communities
Ahmedabad ..	Brahmans .. Banias ..	50 per cent.	Southern Division..	Brahmans .. Prabhus .. Parsis .. Christians ..	60 per cent.
Broach ..	Brahmans .. Banias ..	50 per cent.			
Panch Mahals ..	Do ..	33 ,,	Thana ..	Brahmans .. Prabhus .. Parsis .. Christians ..	33 ,,
Surat ..	Do ..	33 ,,			
Kaira ..	Brahmans .. Banias .. Patidars ..	50 ,,	Bombay Suburban Division ..	Brahmans .. Prabhus .. Christians ..	33 ,,
Central Division ..	Brahmans .. Prabhus .. Parsis .. Marwaris .. Banias .. Christians ..	50 ,,	Bombay City ..	Brahmans .. Prabhus .. Parsis .. Banias .. Marwaris .. Patidars .. Madrasis .. Christians ..	33 ,,

Note :—For the purposes of this order Saraswats and Shenvis are to be regarded as Brahmans.

Acknowledgments.—(*Contd.*)

(2) *Kala-Bhavan Technical Institute, Baroda.*—Calendar for 1924-25. [Contains announcements for 1925-26. Nicely got up and full of information useful for students and intending scholars. The institution deserves to be more widely known. The Principal deserves to be congratulated on the production of this illustrated Calendar.]

(3) *Mysore at the British Empire Exhibition, 1924.*—By Mr. S. G. Sastry, Officer-in-Charge. [The gist of the Report is contained in the following sentence taken from it:—"So far as India is concerned, this Exhibition did not serve any valuable purpose."]

(4) *Year-Book of the Department of Agriculture, Ceylon, 1925.* Published under the authority of the Director of Agriculture, Peradeniya. [As usual, full of valuable information. The articles on Coconut Kernel and Oil, A Thread Blight on Coconuts, are of special interest.]

(5) *Manual of Soap and Allied Industries.*—Published by the "Business World" Office. Price Rs. 2-12. [A book replete with approved processes and recipes with exhaustive directions to prepare all kinds of soaps, candles and allied products, written by people possessed of first-hand manufacturing knowledge.]

The Board of Economic Inquiry, Punjab, (Rural Section).—Questionnaire for Economic Inquiries. [Adapted to Intensive Study. Fairly comprehensive in character.]

The Mysore Economic Journal

A Monthly Periodical devoted to the Discussion
of all Economic Topics of Interest

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Madras since the British Conquest—III.

By the Editor.

Beginning of Anglo-Indian Problem.

Lushington's administration is noteworthy for having given a start to certain movements which later proved beneficial to the country. The newspapers of the day are full of the impetus he gave to the improvement and advance of *Indo-Britons*, as the Anglo-Indians were in those days called, and to the development of Nilgiris as a hill station. Lushington, in August 1829, ordered that when advanced to the grades of warrant officers etc., in the Army, Indo-Britons should be admitted to the benefits of non-effective establishment on the same terms as *Europeans*. Soon (October) they organized themselves into an "East Indian Association". On 16th May, 1831, they, with the permission of Government, held a meeting for the purpose of considering the most eligible mode of representing to Parliament their disabilities. They decided upon a petition, to be presented in conjunction with the Calcutta one, through the East Indian Petition Committee, and called for subscriptions for the purpose. On December 23, 1831, a petition to Parliament, similar in effect to that prepared at Calcutta, was adopted and forwarded to the Calcutta East Indian Committee for transmission to England. A deputation of the Madras Committee waited on the Governor who, besides donating Rs. 500 in aid of their cause, informed them that by a recent order of the Court of Directors, he was empowered to open to East Indians a wider field of employment. He promised them by a Regulation that he intended to forthwith get passed the right to enter public service, to public instruction, and to holding land "in common with other native subjects". Their case was "so good", he said, that there was no need "to waste much money in advocating it at home". In the same letter his Military Secretary wrote as follows :—"The Governor (*i.e.*, Mr. Lushington) is satisfied. You cannot have a better advocate than Charles Grant, the President of the Board of Control, and if you have any doubt upon this point, the Governor recommends you to read Mr. Grant's beautiful description of the revival learning and the diffusion of truth and peace under the auspices of the British Government in India." As is well known, the Right Hon'ble Charles Grant, referred to in the Governor's letter, became afterwards Lord Glenelg. He was for four years President of the Board of Control and was both successor and predecessor to Lord Ellenborough, subsequently Governor-General of India, in that post.

Agricultural Settlements.

There was, besides, formed at Madras an Association called the Philanthropic Association, for the improvement of the condition of the Indo-British and other descendants of Europeans. It received the support of the most distinguished members of society of the time, and Lushington, as Governor, addressed a letter to the Committee of the Association through his Private Secretary, an extract of which is given below both to testify to the constructive scheme of agricultural colonies it suggested and to the interest he took in the Nilgiris as a hill sanitorium :—"The Philanthropic Association, formed at Madras for the improvement of the condition of the Indo-British and other descendants of Europeans, receives the support of the most

distinguished members of society at that presidency, including the Governor, who, by his Private Secretary, had addressed a letter to the Committee, from which the following is an extract : 'The Governor sees no possible objection to the occupation by your brethren, of lands of which they may duly acquire the right of cultivation, in any parts of these territories: the law sanctions their having landed possessions : the provincial courts will protect them in the peaceable enjoyment of every just right, and will restrain them from acts of oppression upon others. The places where you may first settle will require mature consideration, in order to prevent failure and disappointment. Considering that most of you are of the blood and of the religion of the Englishmen, and that all of you have a knowledge of the English language, the Governor thinks one of your first places of settlement should be the Neilgherries, where there are no prejudices of religion to excite that worst species of contention, and where the extraordinary healthfulness of the climate and large unoccupied tracts of highly fertile soil present such peculiar advantages. Having himself resided there for some time, the Governor speaks with knowledge on the subject, when he declares that he does not believe there is a place in the whole habitable world more likely to reward the labours of an agricultural settler, or where he may live with more comfort and happiness, if properly equipped and established, than in that beautiful region of mountains and valleys. There are large tracts of fertile land that have never been broken up by man's hand, and the occupation of a sufficient quantity may be obtained for a price comparatively low, and without fear of quarrel, or the commission of injustice. There is abundance of wood for every purpose of habitation and warmth : the air and the water are of the purest quality, and the mountains are surrounded by the fruitful grain and cattle countries of Coimbatore and Mysore, and by the magnificent forest of Malabar. The vicinity of that coast, and the means of water-carriage which the Calicut river affords, will not only facilitate the access of settlers to the hills on that side, but enable them to export the products of their skill and industry, with safety, cheapness, and expedition. The other lofty ranges of hills to the southward, the Pynee and Vadagherry, as far as their peculiarities are known, very much resemble the Neilgherries in climate, and other geographical characteristics ; and, as they are explored, will, in all probability, be found to promise similar advantages to the settler.' "

Progress of Philanthropic Association.

The following further extract shows the progress made by the Association up to 1832 : " The first report of the committee of this institution (established in 1829 for the improvement of the descendants of Europeans in India), has been published. It details the measures taken to carry the objects of the Association into effect. The Neilgherry Hills were at first thought of, as a suitable spot, but the Shevaroy Hills, in the Salem collectorate, were fixed upon, and there are several individuals located there as agriculturists under the auspices of the Society. At Ossoor also, in the Burhamaul country, two persons are settled as farmers, and grants of land having been obtained for them, there is every reason to hope they will succeed. Apprentices have been attached to every settler, and by this arrangement it is calculated that an efficient body of practical farmers will be raised. The sum originally advanced to each settler was 1,000 rupees, it has, however, been reduced to 700 rupees. An intention was entertained of establishing an inn on the road to Bangalore, by settling individuals at the principal stations, who would also attend to agricultural pursuits ; but it has not yet been adopted. Soon after the formation of the Philanthropic Association, the apprenticing Society was incorporated with it, and the Committee have appointed a competent person to superintend that establishment. The lads are employed in the construction of camp furniture, etc., and it is intended to instruct them in other useful trades. An attempt was made by the Committee to establish a farm in the neighbourhood of Madras, but it did not succeed. Doubts having existed as to the right of descendants of Europeans holding grants of land, a reference on the subject was made to Government, and from the reply received it appears that the restriction is removed. The Committee have had several zemindaries under their consideration, but have not yet extended their operation to any one, being desirous at present of confining their attention to the Shevaroy and Neilgherry Hills. Large contributions in aid of the funds of the institution have been received from Hyderabad and Masulipatam, and it is intended to form establishments at both these places. From an abstract of the receipts and disbursements,

it appears that there has been received 32,500 rupees, and expended 18,445 rupees, leaving a balance of 14,055 rupees in hand."

Social Life of the Period.

About the social life of the period, we have a few interesting glimpses. His Majesty's and the Company's letters to the Nawab of the Carnatic were received with great ceremony. Here is a graphic description of the same from the *Government Gazette*, dated August 31, 1829 :—"The officers of his Majesty's and the Hon. Company's civil, military and naval services assembled at the Banqueting-room at about six o'clock on Friday morning for the purpose of doing honour to the delivery of a letter from His Majesty, and another letter from the Chairman and Deputy Chairman of the Court of Directors, to His Highness the Naib-i-Mookhtar of the Nawab of the Carnatic. The letters were placed on the crimson velvet cushion of a howdah of the same material carried by an elephant covered with magnificent trappings, which was sent by the Nawab for the especial purpose of conveying the letters. The elephant moved at a slow and stately pace, preceded by the garrison band and the grenadier company of the 26th Regiment, and on its arrival at Chepauk, the letters were taken out of the howdah and carried by the Chief Secretary to the musnud, where they were deposited for a short time, while the Right Hon. the Governor and the Naib-i-Mookhtar were seated conversing on a couch on the left hand. After a short pause the Governor rose and delivered His Majesty's letter to His Highness, who, advancing, requested the Chief Secretary to read it. The Chief Secretary accordingly, mounting upon an ottoman covered with crimson velvet, over which a canopy of the same rich material was extended, read the original letter. A translation in Persian was then read for the satisfaction of His Highness and his court, by the Governor's Private Secretary, and salutes as directed in the orders were fired. His Majesty's ship *Comet* also fired a royal salute. The Hon. Company's letter was then read in English and Persian in the same manner, and salutes of nineteen guns were fired; after which the Right Hon. the Governor, the Chief Justice, and the Commander-in-Chief, respectively, congratulated His Highness on this happy occasion. The whole party were then invited by His Highness to a breakfast, which was elegantly laid out for 350 persons, and after breakfast His Highness distributed attar and pan to the whole assembly."

A Fancy Dress Ball.

Here is a rather picturesque account of a Fancy Dress Ball held in 1830 :—A splendid fancy ball was given by the Hon. Mr. Taylor on the 6th January to the Right Hon'ble the Governor and the Commander-in-Chief, and a gay party : the host was in the costume of the Rajah of Tanjore. "We must not omit," says the recorder of these festivities, "to mention a feat, performed by a young gentleman, which had excited the wonder of the public throughout India, when performed by a Brahmin some time ago at Madras—the extraordinary circumstance of a man sitting in the air ; the gentleman, by dint of practice, and extraordinary muscular effort, had so far completely succeeded in the art of suspending himself in the air, that to the astonishment and gratification of the assembled audience, on a signal being given, and curtain or *canaught* being removed from a spot on the right hand of the Rajah of Tanjore, our young adventurer, in the garb of a Brahmin, was found sitting with his legs across, and his right hand resting on a bar or stick, suspending or supporting himself in the air with singular ease and comfort for a period of about eight or ten minutes, acknowledging the gratulations of the assemblage which surrounded him."

An incident took place on this occasion of an unpleasant nature. We are told that "some person or persons took the opportunity, when under disguise, to hurt the feelings of a family of the highest respectability, in having delivered to the lady at the head of it, by means of a person who appeared in the character of a postman, an address of the most unwarrantable nature." In consequence of this, masks are not now admitted at such entertainments, nor any private servants. The incident appears to have created a very disagreeable sensation at the presidency.

Private Theatricals.

The Madras Pantheon, now part of Madras Museum on the Pantheon Road, so called after the old "Pantheon", was a centre of attraction. Here is a caustic attack on its rumoured acquisition by Government and the disappearance of private theatricals in Madras, taken from the *Madras Gazette* of September 12, 1829 :—"A report reached us on Thursday, but which, we hoped, was without foundation, (and we yet hope it may be otherwise than true), or it is very possible the "Poona Gentleman" will terminate theatrical representations at the Pantheon, and unless the public

come forward, and contribute to the erection of a suitable building, to theatrical amusements at Madras : for we have been informed that Government either has purchased or designs purchasing the building for a police office ; and viewing it in connection with other contemplated and long-talked-of arrangements, there does appear something of truth attached to it. The arrangements to which we allude are the removal of the land custom-house establishment to the present police office, and the establishment of a gun-carriage manufactory, on the premises at present occupied as a land custom-house. Should these arrangements take place, we shall witness the death-blow to the last of three public buildings, that in their day were an ornament to Madras, and the power of attraction to men of business and the votaries of pleasure and amusement. It is hardly necessary for us to name "the Exchange", "the Pantheon", and "the Masonic Temple of St. Andrews". We have seen the way of the two former, but how or by what means the latter passed into unhallowed hands with all its plate, furniture, etc., etc., we know not, nor can we divine. Enquiry and research are equally vain ; the truth is not to be fathomed, the mysterious veil not to be removed. But can it be forgotten that such places did exist ? Can the names of those who gave both life and soul to the society of Madras sink into oblivion and be no more had in remembrance ? Noever ! A few still survive the ravages of time, and will keep alive the remembrance of those who were once dear to them, and who contributed, by their public spirit, their wit, their humour, and their vivacity, to render Madras the scene of gaiety, the paradise of India."

Early xix Century Ball Room.

Entertainments, though not frequent, were by no means scarce. The description I quote below is in typical newspaper style. It is from the *Madras Government Gazette* of October 13, 1829 :—"On Monday evening last the spacious mansion of the Hon'ble C. Harris, Esq., was thrown open for the reception of his friends. The truly elegant entertainment was given, we understand, to a happy couple recently married. At an early hour the guests were received by the hospitable host ; the arrangements for the comfort and convenience of the party were admirable, and the evening was remarkably cool. The *Coup-D'Oeil* on entering the ball-room was particularly striking. We will not venture to describe the splendid dresses of our fair countrymen ; where elegance was so predominant, it would be invidious to draw any distinctions. Dancing was kept up with great spirit, and at about eleven o'clock the company were gratified by a brilliant display of fire-works. The quadrills were resumed until twelve o'clock, when supper was announced. The banquet was laid out in a superior style in the suite of upper apartments. Every delicacy of the season and the choicest wines were conspicuous and in abundance. Partaking of the convivialities of the evening, we observed the Right Hon. the Governor and suite, the Hon. J. Taylor, Esq., and the Judges of the Supreme Court. After supper the enlivening dance was resumed, continued till a late, or rather an early hour, when the party reluctantly separated, most highly gratified with the urbanity, attention, and successful exertions of their kind host. We hear it rumoured that many other parties of a similar nature, and in compliment to the happy pair, will shortly follow."

Honouring the Indian Military.

Lushington liked to honour Indians in their own way, especially the military. These rewards to Indian officers were made publicly by him and they showed the kindly feelings he entertained towards them. One example ought to suffice. It relates to the conferring of "nobut", on an old veteran on April 15, 1831 :—

"The Right Hon'ble the Governor in Council, being always disposed to reward the native officers of this army in the manner most acceptable to their customs and feelings, has resolved to confer on Sied Hussain, Subadar-Major of the body-guard, in the name of the Company, the honour of the nobut. The officer's testimonials of military service are a brief abstract of the great actions fought in the peninsula for nearly half a century, and his services in Persia and at Asserghur under Sir Halford Jones and Sir John Malcolm prove that he has been no less distinguished for the ability and fidelity of his political services to the Company, than for his military career. These testimonials are expressed in the strongest language of respect and attachment by all the officers under whom he has served, and the observations of the Government fully confirm all that has been said of his merits, which are as extraordinary as the modesty with which he has forborne to urge them. In token of his services, Sied Hussain has already received from this

Government a grant of land in Jaggire, a palankeen, with the usual allowance for its support, also a sword and horse with a promise that his nearest heir after his decease shall be allowed a pension equal to the full pay of a subadar of cavalry ; it now affords to the Right Hon'ble the Governor in Council the highest gratification to add to those honours by conferring on him the privilege of using the nobut in the Company's territories, together with the honorary symboly of that privilege, and its appropriate establishment. Subadar-Major Sied Hussain will henceforth be known by the title inscribed upon his nobut, Sied Hussain Khan Bahadur Nusrut Jung."

Army Discipline.

The dress of military officers received special attention as time required, and the "strictest adherence" was required of them in regard to the changes ordered. The conduct of the wives of soldiers, sometimes orders of a rather stringent kind were issued at the time. The following order issued by Lieutenant-General Sir George Walker, Commander-in-Chief, to H. M.'s Regiments, was extended to the European troops of the Madras Army :—"With a view of establishing a salutary check upon the conduct of European women, the wives of soldiers of His Majesty's Regiments in this presidency, His Excellency Lieutenant General Sir George Walker has recommended to Government the propriety of vesting a discretionary power in commanding officers of suspending the monthly allowance now granted to them, for their maintenance in the cases of women convicted of selling liquor to the soldiers, or of otherwise misbehaving themselves ; and the Government having acquiesced in His Excellency's suggestions, it is accordingly carried into effect. Commanding officers will therefore be pleased to exercise their discretion in suspending the issue of this allowance, or any portion of it, in instances where they may conceive it conducive to the interests of the service, reporting monthly to the Deputy Adjutant-General of His Majesty's Forces, for His Excellency's information, the names of any women from whom payment may have been withheld,and the particular circumstances of misconduct, and crediting the sums so accruing to the account of the Regimental Canteen Fund."

Races at Madras.

Races were much patronized, even extending to the mofussil. Races were followed sometimes by balls. The *Madras Government Gazette* speaks with great exultation of the races for 1831 :—"It is observed, we will venture to assert, that there never has been better sport, better cattle, and better time witnessed at any meeting in this or any other course in India. We are happy to observe, from the well-filled subscriptions for the three maidens for 1832, for the various sweepstakes booked and closed, that the 'love of the turf' is on the increase, and that we may confidently anticipate for the next a repetition of the capital sport we have enjoyed this year."

Origins of Madras Club.

According to the *Madras Government Gazette* of February 25, 1836, even a Club was contemplated at Madras. The following extract shows the origin of the idea :—"We are happy to find that the complete success which has attended the United Service Club established in Calcutta in 1828, has given rise to the intention of instituting a similar Club at Madras. The plan of the establishment is, we understand, more extensive and more commodious than that of the Calcutta Club. Considerable funds will, therefore, be required to commence upon it, and set it going ; but after the expense of the first outlay, the terms of living will be quite as economical as those of the Bengal Institution."

The Club contemplated eventually materialized into the now well-known Madras Club—called popularly as the "Globe". The following extract (1832) will doubtless be found interesting in connection with it :—"A project is on foot at this presidency, patronized by the Governor and Commander-in-Chief, and the most influential members of Society, for the establishment of a club similar to the Bengal Club. The entrance donation is only 70 rupees a month, instead of 200, as in Bengal, and even that smaller amount is payable by instalments of two rupees per month. It is hoped, by this means, to secure the unanimous support of the services. The first meeting of the Club is thus referred to in a note which belongs to 1832 :—The first meeting of the Madras Club took place on the 22nd April, at the College Hall, Sir R. Comyn in the Chair, when there was a very full attendance of members. The report of the Committee of Management was read, which stated that the Governor and the Naib-i-Mookhtar of the Nawab had consented to become patrons of the Club ; the Chief Justice, the Commander-in-Chief, and other personages of rank, vice-patrons. Mr. Chamier had been elected President. The number of members amounts

to 800. The subscriptions, donations, and contributions amount to 70,000 rupees. The Club was to open on the 15th May. The Naib-i-Mookhtar has given the members the temporary use of the Ameer Bhaug, as a place of meeting."

Later, in the same year, we learn that membership soon rose to 800 and the contributions amounted to as much as Rs. 70,000, Rs. 12,000 of which was from "voluntary" contributions. Reciprocity with the Bengal Club was secured. The first dinner at the Club-house took place on 25th July 1832, in honour, we are told, of the late Secretary, Major Douglas, who was leaving the Presidency. Captain Taylor succeeded him.

State Lotteries.

In old Madras, State lotteries played a great part. 1831 saw the end of them. The funeral oration on them was thus sung by a newspaper of the time :—"In our Supplement we briefly remarked upon the orders lately received from home by the Supreme Government to abolish the Lottery Committee at Calcutta. That Committee appears to have rendered very important services to the public, which have been altogether gratuitious and unrequited ; and we think that the Court of Directors could not have been aware of those facts when they issued their orders. That State lotteries and lotteries in general have an immoral tendency, and have been productive of such misery and crime in England, we are ready to admit ; but in this country, although the evils may partially exist, we are decidedly of opinion that they are by no means serious, and are greatly counter-balanced by the important benefits which the public in India, and at this presidency in particular, have derived from their establishment. We have the pleasure to subjoin the following statement of the appropriation of the Madras lotteries for several years past, which, we feel confident, will bear us out in this opinion."

"Statement in what manner the profits of all the lotteries have been appropriated from the Madras Asylum and Road Lotteries, from the year 1795 to 1806, and from the first Madras Government Lottery, from the year 1807 until the year 1808 :—

	Rs.
Male Asylum	85,399
Female ,, ...	55,755
Native Hospital and Monegar Choultry.	59,965
Purchase of rice during the famine in 1807, by order of Lord William Bentinck	7,000
St. George's Church	2,18,512
Scotch Church	55,221
Black Town Chapel	6,125
St. Mary's Church repaired ..	10,850
New made roads and repairs from the year 1795 to 1818	8,33,312
New bridges constructed and repaired.	63,685
Individual charitable donation ..	12,125
(Not considered as the above charities (for the Public Benefit.)	
Donation to the mother country to carry on the war	17,500
Expenses towards the yearly charges of the cenotaph	34,300
Repairs of the exchange pictures paid to Mr. Hickey	7,000
Grand Total Rs. ..	14,66,849."

What Goes to Make Paper?

A Florida publisher is using newsprint made from grass. Paper is handled more than any other single article by the majority of people yet the question as to how it is made or what materials compose it seldom occurs to the users of paper, says the New York State College of Forestry, Syracuse University.

The question is often asked because of the commonplace of paper and when asked usually is only partly answered. There are many different materials from which paper can be made but which, due to their scarcity or the expense of manufacture, are not commercially possible. This applies to a variety of trees and barks of trees or shrubs that grow in remote regions or in small quantities or contain undesirable substances that cannot be economically eliminated. Many of these materials are waiting on the discoveries of scientific research both in mechanical and chemical lines.

The Florida concern is making its newsprint from a coarse growth called saw grass that thrives in tropical climates. But the materials from which paper, usually found on the market, is produced are numerous enough to astonish the average person. Among such materials will be found cotton, flax, jute, super cane, bamboo, straw from North Africa, esparto, a grass from North Africa and used extensively for paper in England ; spruce, the most useful forest tree for paper-making ; hemlock ; balsam ; yellow pine, poplar, tamarack, gum, white fir, jack pine, cottonwood, white pine, beech, birch and maple. The important quality in the material is the fibre. Wood with the longest and whitest fibres is usually the most desirable for paper manufacture.

The Capital Surplus in the United States.

By Virgil Jordan.

The condition of the money market in the United States to-day presents some curious features which should be of considerable interest to Europeans, even though their deeper significance is a matter of speculation. There has been, both here and abroad, a great deal of talk recently regarding the future position of the United States in world finance, and especially regarding the way in which she appears to be superseding London as the focus of financial control. The rivalry of the pound and the dollar as candidates for the financial presidency on the Continent is a reflection of the tendency of the world to look to the United States as a new financial base. This has far-reaching implications, but no one would venture at this stage to suggest more than a few of the outstanding factors and possibilities in the situation.

There is at present a larger amount of unemployed or only nominally employed capital in the United States than at any period since pre-war days. Call money on the New York Stock Exchange is as low as two per cent and loans outside of the Exchange at one and a half per cent. The Federal Reserve Bank rediscount rate has been twice lowered in the past few months and now stands at three and a half per cent. With bankers' acceptances ranging from two and one-eighth per cent to two and five-eighths per cent and commercial paper from three and a half to four per cent, it is clear that money is more plentiful than it has been for years. Federal Government loans last year were (perhaps unnecessarily) offered at four per cent. Recently $150,000,000 were offered at two and three-quarters per cent and the subscriptions totalled more than $600,000,000.

As a result, banking is not so prosperous a business in the United States just now as it has been at other times. Bank loans are by no means expanding so rapidly as reserves. Many of the banks are cutting expenses and reducing luxurious services and frills as their business and profits are falling off.

There are two major factors in the situation. In the first place there is the growing depression in industry and trade which has reduced the demand for loanable funds. Production is being kept down to the falling consumer demand, and certainly little or no expansions are being made. Wholesalers and retailers are buying on a hand to mouth basis, refusing to stock up in advance, so that the need for credit is minimized. The political hazard, the excess of productive over domestic consuming capacity, the declining levels of prices and wages are contributing elements to this business hesitancy.

At the same time it should be noted that industrial and business concerns as well as governmental authorities (tax-exempt bonds not having been prohibited by the tax law passed in the last session of Congress) are taking advantage of the low money rates to increase their capitalization and finance themselves by security issues independently of banks. In May, 1924, $625,919,200 worth of corporate securities (par value) were floated. This is the largest on record for any single month, and it indicates, incidentally, the vast amount of capital seeking investment in the American market.

A second factor in the situation is the continued growth of gold reserves through steady imports. The United States now holds the bulk of the world's gold and some are wondering whether she will not soon suffer the legendary embarrassments of Midas unless some eventuality quite as unforeseenable as the gold inundation was unexpected soon occurs.

Both these things are due fundamentally to the same underlying condition—the war and the European situation since. The tremendous artificial increase in foreign demand during the war led to a vast expansion of productive capacity, which the present domestic consuming capacity cannot support. The disruption of European industrial activity has affected American economic life in two outstanding ways. First, it has impaired European purchasing power for American agricultural products. This has reacted upon American industry by diminishing the purchasing power of the American agriculturist, upon whom the domestic industrial market largely depends. Second, it has forced Europe to pay for her necessary purchases from the United States (which are in some respects even higher than pre-war in value) by drawing upon her own capital reserves, thus causing a continuous influx of gold into the United States. This influx has been swelled by war debt payment, by the tendency of foreign or American capital

to escape the insecure conditions abroad and seek investment in the United States, and has not been greatly offset by American credit accounts to Europe.

What the ultimate effect of these conditions is to be can only be guessed at. On the domestic side, so far as American industry is already over-expanded in productive capacity, and state and local government expenditures already excessive, the draught on the present easy money market is going to add to the burdens of the consumer and tax-payers ultimately, by exacting increased taxes for increased government indebtedness or increased prices to cover increased unproductive overhead. In so far as the current security flotations pass into plant expansion they will of necessity increase the pressure for foreign markets.

In either case there will be an increasing tendency for American capital to seek investment abroad, where interest rates are and will be higher for a long time. This implies, of course, increasing penetration of European economic and therefore of European political affairs by American finance, leading perhaps ultimately to a "dollarization" of European finance and the development of a kind of international currency based on the dollar. The need of restored European industrial activity for American industry and agriculture and of secure bases of investment abroad may naturally bring these things to pass. The Dawes plan is in some respects a foreshadowing of these developments.

What an extensive investment of American capital in Europe or in former European fields of investment may mean in regard to labour and politics are interesting but rather too speculative questions ; and one can only hope that these collateral effects will not be bad, and will make for class and international peace. It is probably in these connections that the League of Nations will perform in time a real service, and the emergence of the League question among the issues of current American politics is a suggestion that the need for it in relation to these problems is being sensed. That in the great volume of mobile capital in the United States to-day we see the basis for all these possible developments is fairly certain, and it should stimulate a great deal of sober American and European thought.

Production of Alcohol for Motor Fuel in the Tropics.

The question of making an efficient motor fuel in the tropics, where imported spirit is expensive, is at present attracting considerable attention. Various materials have been suggested, and in some cases tried, as a source of power alcohol, such as starch-containing roots, and cellulosic residues from the sugar and other industries, but one of the most valuable appears to be the sap which may be collected from the flowering shoots of the Nipa palm of the Far East. Considerable work has been done in the Philippine Islands in ascertaining the suitability of this palm for the production of alcohol and quite recently an experimental plant has been erected in the State of North Borneo. The plant is being run under the direction of the local Department of Agriculture and an account of the results of the first year's working, based on a memorandum supplied by the British North Borneo Company, is given in the current number of the "Bulletin of the Imperial Institute", published by Mr. John Murray.

There are about 300,000 acres of Nipa palm in North Borneo, occurring in nearly solid stands of 5,000 acres or more. The sap flows for only six months in the year, but it is estimated that during this period 900,000,000 gallons of sap, capable of producing nearly 60,000,000 gallons of alcohol, could be obtained. The results of the first year's working of the experimental plant came up to expectations in every way. The still was only capable of producing 100 gallons of alcohol per working day of 12 hours, and the costs of running such a small plant were naturally somewhat high, but it is shown that a permanent plant producing not less than 1,000 gallons per day should prove a commercial success. Estimates are quoted in the article of the cost of production for plants of various capacities. For a plant capable of producing 2,000 gallons per day of 12 hours the capital required is estimated at about £26,000, and the profits on the spirit delivered in Singapore or Hong-Kong would be equivalent to a dividend of 10 per cent on the capital. An 8,000 gallon plant run for 24 hours per day would require a capital of about £122,000 and this, it is estimated, would yield profits equivalent to 30 per cent on the capital.

Education in Bombay.

By "Academicus".

The Resolution of the Government of Bombay on Educational progress in that Presidency sums up admirably the position of Education to-day in Western India generally. In the year under review the number of pupils receiving instruction increased by 35,399 or 3.9 per cent, the increase in primary schools for boys accounting for 23,652, the corresponding figure for girls being 5,582. Government view with satisfaction the position which the figures reported by the Director of Public Instruction reveal and the fact that this Presidency has secured the leading position in all India as regards the proportion to population of both boys and girls attending school. Expenditure on primary education for the year 1923-24 when compared with the figures for 1913-14 shows an increase of no less than 265 per cent. On secondary education the figure has risen from 7.88 lakhs in 1913-14 to 21.09 lakhs in 1923-24 equivalent to an increase of 168 per cent. The total expenditure from provincial revenues in the year under review was approximately $2\frac{3}{4}$ times the sum spent ten years ago. The total increase in expenditure over 1922-23 amounted to nearly 18 lakhs. It is satisfactory to observe that in spite of this increase in expenditure the cost of direction and inspection fell from 8.3 to 7.3 per cent.

Demand for University Education.

The demand for University education is steadily growing, the increase in the number of candidates for Matriculation being 10 per cent. For some time past Government have viewed with growing concern a tendency towards the lowering of the standard previously maintained in some branches of academic learning and in consequence the courses for the M.B., B.S., and B.E. degrees have now been revised, and the standard of qualification for admission to the Medical and Engineering Courses has been raised. A school of Economics and Sociology has been established and a Committee appointed "to examine the present constitution and functions of the Bombay University, with a view to broaden and liberalize its constitution and to consider its transformation into a teaching University, and the question of bringing the University into closer relation with the Commercial and Industrial interests and public bodies in the City of Bombay".

Secondary Schools.

The increase in the number of pupils in Secondary Schools is substantial and indicates a rapidly growing demand for secondary education. This increase, while satisfactory in itself, necessitates constant supervision and watchfulness on the part of the executive officers responsible for education in this Presidency to prevent any diminution in the standard of efficiency, and any tendency to sacrifice quality to quantity. The extension of primary education has always been and will continue to be the peculiar concern of local Government in India. The total expenditure on primary education in Bombay Presidency in the year under review amounted to $166\frac{1}{2}$ lakhs, of which Government provided over 110 lakhs. While the Bombay Government are devoting their resources so liberally towards attaining the final goal of compulsory primary education, it is to be observed, with regret, that the response of local bodies has not hitherto been equally liberal. The difficulties under which local bodies labour are fully appreciated, but it cannot be reiterated too forcibly or too frequently that the burden of financing education for all, cannot wholly be borne by Government but must be shared in due proportion by local bodies. The provisions of the Primary Education Act contain infinite possibilities and provide wide avenues for advance in the direction of universal literacy, irrespective of caste or creed, and Government will observe with interest the degree to which advantage will be taken of the facilities offered and the energy with which the possibilities will be exploited.

Mahomedan Education.

Except in the Bombay Division where 98 per cent of the Mahomedan pupils are in the lower vernacular standards a satisfactory increase in the number of Mahomedans both in secondary schools and colleges is recorded. The failure of the Hindu backward classes to show equal progress with the Mahomedans in secondary and higher education is a regrettable feature. Government cannot view without concern the fact that in spite of the grant of special scholarships the Hindu backward classes constitute approximately only 10 per cent of students in colleges and 25 per cent of

the pupils in secondary schools, the remaining 90 per cent and 75 per cent respectively belonging to the professional and trading classes.

All-Round Progress.

While it is evident that much room for improvement remains, there are indications that the cause of education in this Presidency made satisfactory progress in many directions during the year under report. The adverse influences at work during the years immediately preceding dwindled to the point of extinction; the progress made by schools with an agricultural bias was encouraging; the increase in the number of girls receiving instruction was steady though not well diffused over all parts of the Presidency and confined to a few communities; a scheme for ensuring that each district will have approximately the same percentage of trained teachers was elaborated; increased provision of special facilities for Mahomedans and backward classes was made and will no doubt show results in the future. There were signs that in the Deccan districts in particular the desirability of securing education for their children is becoming widely realized by all classes of parents and the attraction of an increasing number of students by the engineering, technical and industrial schools was an especially welcome feature of the year's activities.

Problems of the Future.

The Bombay Government, we note, fully realize that the maintenance of progress in education during the year under review and in the immediate future must have entailed and will entail a more than usually heavy strain on their officers. The Department has lost several experienced officers of the I.E.S. during the past two years, and its complete provincialization in accordance with the recommendations of the Lee Commission involves a re-organization of the existing B.E.S. and S.E.S. This re-organization—coupled with the transfer of control over primary education to the Local Authorities—is found to give rise to many difficult administrative problems in the solution of which the greatest care and discrimination will be required. The Bombay Government, however, are confident that, as in the past, the Director and his officers will not fail them in finding a satisfactory solution of the various problems which may arise, and desire to place on record their appreciation of the good work done by them during the year under review.

Banking Development in India.

The statistical tables relating to Banks in India are always interesting and those for 1923, just published, are no exception to the rule. The clearing house returns in the last pre-war year showed a total clearance of Rs. 650 crores. This amount was rather more than doubled under the impetus of demands for Indian produce and manufactures during the war, and in 1919 the figure recorded was Rs. 1,801½ crores. In 1920 there was a phenomenal rise to Rs. 3,149 crores. In the two subsequent years the annual average was round about Rs. 2,022 crores, while in 1923 the returns were down almost to the 1919 figures, the clearances amounting to Rs. 1,876 crores. Government or public deposits in the Imperial Bank of India decreased from Rs. 14 crores to Rs. 8½ crores, while private deposits advanced from Rs. 57 crores to Rs. 74 crores. The deposits in India of 18 exchange banks doing business there were £68½ millions and the cash balances £14½ millions. In 1914 the total capital and reserve of all the banks included in these returns was about Rs. 49 crores, and the deposits in India were Rs. 94 crores. The high water mark in deposits was reached in 1920, when, with Rs. 109½ crores of capital and reserve, the banks held in India Rs. 235 crores in deposits. In 1923 the corresponding figures were Rs. 161 crores and Rs. 199 crores. Cash balances at the end of 1923 were 18 per cent of the liabilities on deposits in the case of the Imperial Bank of India, 19 per cent in the case of exchange banks doing a considerable portion of their business in India, and 27 per cent in the case of those exchange banks doing a major portion of their business abroad. For the first time the statistics include particulars respecting the provincial and central co-operative banks, which are of so much value to the small agriculturist in the obtainment of credit facilities. The seven larger banks have a total capital and reserve of Rs. 57 lakhs, and the deposits and loans received amount to over Rs. 4 crores as against only Rs. 15 lakhs when the war began. The smaller co-operative banks are 72 in number. They have a capital and reserve of Rs. 154 lakhs, and the deposits and loans received amount to nearly Rs. 6 crores.

Indian Economic Studies.

The Madura Saurashtra Community—I.

By K. R. R. Sastry, M.A., F.R.Econ.S. (London).

CHAPTER I.

Introductory.

The outstanding feature of Industrial and Commercial Madura is the corporate activity of the Saurashtras. It is not merely the student of Economics but also the globe-trotter who chooses to tarry a day at Madura,* that is curious to gather some particulars about this community. The nature of this study is mainly economic; and rites, customs and other interesting particulars come in to illustrate one definite economic feature or other.

The importance of the study of this community will be evident when one remembers the fact that the Saurashtras have settled in 56 places in South India. But the Saurashtras of Madura are better clothed, more wealthy, and better housed than their caste-men in other parts of South India—say Kumbaconam, Salem or Conjeevaram. The subject is thus highly instructive to the rest of their community.

Past notices of this *community* have been carried on with different aims. The valuable hints one gathers from the old as well as the revised Madura Gazetteers are meagre. The tourist's guide, published by Messrs. Higginbothams & Co., gives more prominence to some of their customs as is natural with a book of that type. The point of view of the *community* has not been taken up seriously; nor has the value of an economic study of such an important community been sufficiently realized before.

CHAPTER II.

The History of the Community.

The historical origin of this community is highly interesting, not to say edifying. Two recent booklets in Tamil have been published by a Saurashtra author with a view to establish the ancient Brahminical origin of the community. One blemish with these books is that very recent official notices are raised to the height of original evidence.

Initially, it is pertinent to raise the points for and against their Brahmanhood, since it has weighed with them rather heavily during the past three decades. The believers in their Brahminical origin point out that all rites from Upanayana (holy thread-ceremony) onwards are performed by them. A more recent discovery consists in the Mangammal (1689-1704) Decision (Salivahana Era 1627 Parthipa Avani). One, Venkatarangier, a Brahmin astrologer, arrested eighteen Saurashtras who performed Upakarma (renewal of the sacred thread) and sent them to Trichinopoly for trial. Queen Mangammal convened a meeting of learned men well versed in the Sastras to investigate their right to perform these ceremonies. This meeting declared in favour of the Saurashtras and the Queen gave them a palm-leaf award, which is still preserved in Madura.* In support of this, the Circular of the Collector of Salem No. 90 Census, dated 25—1—01, where this community is returned as Saurashtra *Brahmanas*, is also cited.

But the Madras Census Reporter for 1901 brings in the following pertinent observation. "Since all the twice-born, whether Brahmins, Kshatriyas or Vysyas were entitled to do the same, the grant establishes little." Further, in the Census of 1911 this community at Madura is returned as "Patnulkars". In 1921† they are entered as "Saurashtras" and not included among Brahmins. This part of the question may be closed with the remark that it is natural to expect the southern Brahmin to protest against the Brahminhood of a community so fundamentally different from them in their rites, customs and manners.

Before tracing the historical origin of the community, it is profitable to make a critical reference to the theories which are fondly believed by them. The theory of Devagiri origin has got an element of truth in it. Originally Brahmins living in Devagiri, the Saurashtras, called also Girinarayana Brahmanas and Somapuri Brahmanas, were supplying Goddess Laxmi with silk cloth on the Deepavali day. One year the supply fell short and they got the curse of weaving on their heads; and they were expelled from

* Madura in this study includes only the Municipality of Madura.

* *Vide* The Madura Gazetteer, Revd. Vol. I, p. 111 and also 'A Short History of the Saurashtra Community' in Tamil by T. S. Venkatarama Sastri, p. 46.

† The Madura Gazetteer, Vol. II, p. 13 and Census of India, 1921, Vol. XIII, Madras, Part II, p. 116.

Devagiri. The second theory of Tantuvardhana runs as follows :—They are believed to be the descendants of an eponymous Tantuvardhana (*lit.* Improver of threads). Their origin is said to have been described in Brahmanda Purana Purvoktha Kanda I. Tantuvardhana born out of the head of Brahma, the four-headed god of creation, married Kusumakelika, the daughter of the Sun-god on the Rathasapthami day. The said bride brought the seed of "Karpasha" from Heaven and planted it on earth. From this cotton, yarn and cloth were made and distributed to immortals and mortals alike. This theory is not of any scientific value for tracing their origin.

The historical view is based on an inscription at Mandasor in Western Malwa, dated 473-474 A.D.* It relates how the Pattavayas were induced to migrate thither from the Lata district on the coast of Gujerat by King Kumaragupta (or one of his lieutenants called Bandhuvarman) to practise there, their art of silk-weaving. On the destruction of Mandasor by the Muslims, the Pattavayas seem to have travelled South to Devagiri (Doulatabad) and thence when the Muslims again appeared on the scene at the beginning of the 14th century, to Vijayanagar, where they seem to have learned† Telugu. After Talikottah—1565—one branch migrated to Madura and settled there through the patronage of the Nayak Kings.

Other lines of evidence to confirm this historical view are six in number. A Mahratta MS. prepared at Salem by Mr. Cockburn in 1822 is found to contain the above tradition with remarkable similarity. Mr. Sewell's "A Forgotten Empire" is full of the riches of clothings and trappings in the days of Vijayanagar glory. Many Saurashtras still speak Telugu. Their written characters still continue in Telugu and the language also contains many Telugu words. These go to confirm the theory that they must have settled for a sufficiently long time in the Telugu country. That they came into contact with the Yadhavas at Devagiri gains some strength by the discovery of many Vraja words in the Saurashtra vocabulary. The Saurashtras observe the feast of Basavannah (or Boskana) which is said to be "almost peculiar to the Bellary country". This theory is also fortified by one of their marriage customs :—"On the day previous to the Saurashtra wedding, the bridegroom's party goes to the bride's house, and asks formally for the girl's hand. Her relatives ask them in a set form of words, who they are and whence they came, and they reply that they are from Sorath (the old name of Saurashtra) resided for a while at Devagiri, travelled farther south to Vijayanagar, and thence came to Madura. Then they ask the bride's party the same questions and receive the same reply."

Thus, the Saurashtras form a migrated community in Madura from "Saurashtra" (Cutch and Kathiawar). They were long ago silk-weavers in their original homes. Driven to distant places through political causes, the community could have carried with them only their valuables, and not least, their skill in weaving. Owing to the patronage of the Nayak kings, they were able to settle in a foreign country. How a thoroughly foreign community succeeded in not merely settling down in a strange country but within 300 years have contributed to "the proud position of Madura to this day as the second city in the Presidency"—this is an interesting story. This leads us to the study of the community as it is to-day.

CHAPTER III.

Local Importance at Madura.

Statistically, the Saurashtras at Madura are about one-third of its population ; and 43% of the community settled in South India. In 1911 the population of Madura was 1,34,130 and in Madura District, the Saurashtras numbered 43,431. The figures for 1921 are as follows * :—

Total population.	1,38,894.
Saurashtras.	39,215.

The fall since 1911 is appreciable, but there is a reasonable suspicion that the change in the terminology of the caste from "Patnulkar" to "Saurashtra and Saurashtra Brahman", may have led to some error in calculation. The community still constitutes about one-third of the population.

Their geographical distribution at Madura is also a factor of considerable importance. Strangers in a distant country, the Saurashtras would have naturally settled in a quarter where they could form a separate colony as it were. The South and South-east portion of Madura till the Mariamman Teppakulam, is *par excellence* the Saurashtra quarter. The Saurashtra is easily distinguished from members of other castes by his yellow complexion, his foreign accent, and his shy manners. The term "awkward", used with reference to his

* *Vide* The Indian Antiquary, Vol. XV. The Mandasor Inscription, by J. F. Fleet, p. 196.

† Also, the Madura Gazetteer, Vol. I, p. 110.

* *Vide* 'The Village Statistics', 1921, Madura Dt.., p. 11.

manners, needs considerable modification. The Saurashtra Club and the behaviour of the educated and cultured among the community have done not a little to remove this stigma attached to them by the compiler of the "Guide". Tall and generally handsome, he wears a small tuft on the top of his head, their women dress like Telugu Brahmin women, and it is a striking feature with them to go to the Meenakshi temple rather more regularly every evening than their sisters of other communities.

They form a caste by themselves having their own priests and temples. Though subdivisions have been formed owing to their increasing numbers and division of occupation, their communal attachment is remarkably strong. Their marriages take place within Madura only; in fact, it is considered derogatory if one were to make an alliance with people in Salem or Kumbaconam. In a strange land, partly by necessity and partly by the accident of difference in language and modes, they formed a separate community. This self-centred characteristic is of economic importance in the cenetring and practical monopoly of dyeing and weaving industries among themselves.

Their mythical origin from Tantuvardhana, (*lit.* improver of threads) gives a clue that weaving was a time-honoured trade even in their original homes. That this is a community of business pursuits, is forced upon everybody through more channels than one.

CHAPTER IV.

Spinning.

A seriatim study of their exclusive trades of weaving and dyeing is called for. Since in the modern process of textile-making, the spinning of yarn precedes the process of weaving, it has a prior claim. Primarily, the different stages which cotton has to undergo before spinning, have to be borne in mind. Ginning in cotton centres, cleaning and pressing are not done by the Saurashtras in Madura.

When spinning is taken into account, two broad divisions are obvious: handspun and mill-made yarn. The hand-spinning or Charka industry in the Saurashtra community is easily narrated. When compared with the work of the Saurashtras in Namakkal (Salem Dt.), where yarns of counts varying from tens to forties are made in Charka, the progress at Madura is quite negligible. About 100 Charkas are at work. Khadi cloth has not yet become popular with the bulk of the community. Further, people of the warping industry have been complaining of the Charka yarn not being useful for warping and sizing purposes. The workers of Khadi have to improve their counts if the output were to be used for weaving purposes. Thus, the output under this head is quite negligible and may be left out of account for all practical calculations.

Mill-made yarn alone may be said to meet the demands of the Saurashtras. The quantity of yarn consumed at Madura by this community may be arrived at if figures from the supplying agencies are available. Here again, under the two divisions of Inland and Foreign, the figures may be grouped.

A. *Inland Yarn.*—The Madura Mills Co., Ltd., through their five local agents, the Koilpatti Mills, Limited, through their Agents—'Sri Vilas' at Madura—and the Sri Ram Mills, Limited—a purely Saurashtra concern have to be taken into account.

I. *The Madura Mills Company, Limited :*—24's and below. Approximate quantity consumed by the Saurashtras—1000 bales per mensem.

II. *The Koilpatti Mills, Ltd.*—24's and below. Approximate quantity consumed by the Saurashtras—Figure is said to be very low since Koilpatti Mills have not fetched a market at Madura.

III. *The Sri Ram Mills, Ltd.*—10½'s to 24's. Approximate quantity consumed by the Saurashtras—150 bales per mensem.

B. *Foreign Yarn.*—For counts above 40's to 160's the Saurashtras get their supply through the two local agents of Messrs. Beardsell & Company and Rally Brothers. During the pre-war and war years when Messrs. Rally Brothers were having the bulk of the trade, the swing is now turned towards the other side. Messrs. Beardsell and Company has two-thirds of the business while the remaining one-third is still retained by Rally Brothers. The order of demand for these finer counts of yarn is as follows :—

A. 40's Grey.
B. 40's Coloured—yellow and orange.
C. 60's Medios. Not white.
D. 70's 80's. do. do.
E. 100's, 150's and 160's—for finer manufactured goods.

Foreign Yarn.—The approximate quantity consumed is given below :—

No. of Counts.	Bales consumed per mensem.
40's to 44's Grey. ..	100
40's Yellow and Orange. ..	150
50's Black.	30
50's Grey.	30

No. of Counts.	Bales consumed per mensem.
60's Grey.	30
60's Medios—Not White. ..	60
80's Grey	15
100's Grey	15
80's to 100's—Half Bleached.	30
80's to 100's—Fully Bleached.	30
150's to 160's—Medios. ..	10
Total	500

Thus the Saurashtra community consumes 1,150 bales of inland yarn and 500 bales of foreign yarn per mensem.

When there is such a huge demand for yarn, it is an interesting fact to find out that the Saurashtra concern of Sri Ram Mills is able to meet only 9% of the local demand of their community. To cope with the increasing demand, another Saurashtra concern under the name of The Madura Industrials, Limited, has been very recently registered and floated.

How the Saurashtras are managing their first spinning concern is an index to their skill in managing big business concerns. The Madura Saurashtra Sri Ram Mills Company, Limited, was started on 14th September 1916. Before December 1919, it ceased to work for some time. It is purely a spinning concern; and yarn from 10's to 30 counts are spun here. The raw product is procured from Virudupatti (Tinnevelly District). There is an yearly consumption of cotton worth Rs. 3 lakhs. For the year ending 30-6-21 the purchase of raw cotton amounted to Rs. 2,91,595—0—6. It is managed by a Board of 7 Saurashtra Directors.

The Capital invested in this Company is as follows :—

	Rs.
Authorized Capital.	
(1) 4,500 Ordinary Shares of Rs. 100 each	4,50,000
(2) 1,500 5% Cum. Pref. Shares of Rs. 100 each	1,50,000
Total ..	6,00,000
Subscribed Capital	5,24,300
Paid-up Capital.	
(*a*) 4,500 Ordinary Shares of Rs. 100, less 27 Ordinary Shares forfeited, *i.e.*, 4,473 Ordinary Shares of Rs. 100 ..	4,47,300
(*b*) 743 Cumulative Preference Shares of Rs. 100 each fully paid	74,300
Total ..	5,21,600

In the report of the Registrar of Joint-Stock Companies, it is found that the Company has reduced its capital by Rs. 270 in 1921-22.

There are 6,000 spindles at work in this concern which bears no comparison with the 110,000 spindles in the Madura Mills Company, Ltd., on the other side of the railway line from Madura to Madras. Even in output, this concern turns out only 5 to 6 bales a day while the Madura Mills, managed by Messrs. A. and F. Harvey, turn out about 130 bales a day. As the Managing Director of the Sri Ram Mills tells the present writer, "there is no near possibility of competing with Harvey's."

The site, on which the present Mill is situated, is held only on lease which continues for six more years. The company has already spent a sum of Rs. 1,34,468-10-5 on the Mill premises and buildings; and it is time for the Management to acquire a permanent site for the business.

The net Profits declared for the year ending 30th June 1921 are thus disbursed :—

Net Profits during 1920-21.			
From trading accounts	Rs. 1,64,372	0	11
B. F. from last year	,, 6,082	15	4
Total ..	1,70,455	0	3
How disbursed.—			
Remuneration of the Managing Director, 15% of the net profits.	Rs. 24,655	12	9
7% for Reserve Fund.	,, 11,506	0	3
5% Paid-up Capital, Cumulative Preference Shares	Rs. 3,715	0	0
15% Dividend on the Building shares.	Rs. 67,095	0	0
Balanced carried forward	Rs. 63,482	2	10

Dividends.—

For half-year ending June 1920.	6%
1 Year 1920-21. ..	15%
1 ,, 1921-22 Expected Dividend ..	18%

Here again, this company has declared a dividend of 15% on ordinary shares in 1920-21 when the Madura Mills Company, Ltd., was able to declare a cent per cent dividend. This shows that there is still scope for improved methods of management, though this management has declared an addition of 9% in 1920-21 on the previous years.

The Mill engages about 500 employees daily while the Madura Mills Company, Ltd., employs more than 4,000. The scale of wages paid by this concern runs thus :—

Adults :—

Male.	Re. 0 10 0	to	Re. 1 4 0 a day
Female.	,, 0 5 0	to	,, 0 9 0 ,,

Children :—

Male. Re. 0 4 0 to Re. 0 8 0 a day
Female. ,, 0 4 0 to ,, 0 8 0 ,,

It is striking that this compares favourably with the average daily rate of wages paid in the Presidency in 1920 * which is as follows :—

Average daily rate for the Presidency.

Adults (male) .. Re. 0 10 8
Children (male) .. ,, 0 5 2

The working hours are from 6-45 a.m. to 11-30 a.m. and 12-30 p.m. to 5-30 p.m.

There is some reduction from the eleven hours' day which was in vogue in the previous year. There is one holiday in a week. A small dispensary is also situated within the compound with a compounder and an assistant. It is intended only for ailments during working hours. The number of cases attended to, may, with profit, be entered by the dispensary.

There is a shrewd suspicion that the Company can be more efficiently managed. One family is said to predominate in the articles of association ; and the fact of blood relationship among all the Directors is adduced by some critics as prejudicial to efficient management. A recent discord between the two brothers regarding the Managing Directorship was settled only through reference to a Court of Law. Apart from these points, the Managing Director is being paid an unduly high percentage of the net profits. It is striking that this is pointed out as one of the dangers to be guarded against by the Inspector-General of Joint Stock Companies, after a study of the causes of liquidation of 48 Companies during 1921-22. †

This Saurashtra Mill needs further extension since there is a keen local demand. A special Ginning Centre in the Cotton locality is worth the early attention of the Management. More spinning mills may be started in view of the Local demand for yarn ; this point is also supported by the floating of a new Meenakshi Spinning Company where some Saurashtras have also taken shares.

CHAPTER V.

Weaving.

It is a common sight to witness warps stretched in the streets and men, women, and children busy in them. Since much is gained by a systematic study of this industry, the initial processes prior to weaving need a passing mention. The mill-made yarn is to be sized, rolled on a plank, and arranged by reeds, before the process of weaving takes place.

At Madura, the sizing process is not done by the Saurashtras but by a separate community called the Pavukkara Naikkamars. The trade of this community consists in starching the warp given to them by the Saurashtras. It may be mentioned in passing that in Paramakudi (Ramnad District), this starching process is also taken up by the Saurashtras.

Preparing the warp is the first stage in the process of weaving. Women and children help appreciably in the earlier and easier process. Warping, it is striking, is not done through walking up and down a long line of sticks stuck in the ground and winding the thread off the spindle in and out of these ; but the thread is wound on to "a series of iron pegs arranged on a square wooden frame". The advantages of this process are that work may be done indoors and during all weather.

For the past 10 years, a painstaking Saurashtra of the Bhava Ram family was making experiments on a warping machine. Success is said to have crowned his efforts at last. The difficulty is one of finance. The invention has not yet been patented. The many advantages of this labour-saving device over the process above described result in increased output and cheapness of the process. If one were to work for eight hours in this machine, the individual can easily earn five rupees a day. The difficult process of warping is minimized. A wide yard for the starching process is not now necessary. Three to six pairs of persons for working at the starching process are no longer required ; and two workers are enough. Working in open streets is avoided ; thus, the uncertain conditions of weather are no longer obstacles in the way ; and the incidental difficulty caused to passengers in public roads is avoided. Warping and starching are finished at the same time. A place 30′ x 15′ is sufficient ; and warping of yarns from 10 counts to 160 counts can be taken by this machine.

The process of weaving can be divided into two heads—plain weaving and inter-weaving. In the first case one worker is enough and two persons are required in the latter process. The second kind of weaving is called in the Saurashtra language, *Sivni-Thath*. Weaving of cotton cloths and sarees may be first taken into account.

Handlooms are still in use, though fly-shuttles are also being employed in increasing numbers. In handlooms, there are two types,

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* *Vide* G.O. No. 858 Development, dated 26th June 1922.

† *Vide* G.O. No. 1594 Law (General) Department, dated 28th June 1922

viz., the elevated loom and the pit-loom. The former is very common but there is still a small number of pit-looms persisting in Madura. The latter involves the strain of a very inconvenient posture on the part of the worker. The worker with a handloom can finish one Thari of 30 yards' length of cloth in a month. A patent, modifying the country-loom, through which figures are woven on the borders of cloth, is also in vogue.

The fly-shuttle is surely an improvement on the handloom. A convenient posture for the worker is ensured and the output per month is 50% to 100% more than that of the handloom. Some wastage, which is not very common, recurs in the woofing process. The "Wheel Shuttles", supplied by the School of Arts at Re. 1-2-0 each, are to be used in increasing numbers. At Madura, in more than twenty observed cases, the "Wheel Shuttles" from Madras do not fit in with the loom. This can be easily rectified. A common complaint against the use of "fly shuttles" is that they are apt to break the warp-threads in the case of the higher counts of yarn. A patent for an entirely new kind of loom is in the stage of trial.

From ordinary towels and dhoties, to the finest upper cloths,—from 10 counts to 160 counts (which is commonly termed 200 counts)—all sorts and varieties of cloth are produced at Madura. The fabrics the Saurashtras make are better woven and of more varied designs than those of any other place in the district. These are exported in large quantities to Madras and elsewhere. White cloths ornamented with borders of gold or silver thread are specially famous.

Another and more important branch is that of silk-weaving. The raw material is imported from Bombay and to a less extent from Calcutta, Kollegal and Mysore State. This industry is practically confined to Madura Town. The importance of Madura is evident from the fact that it is one of the eight silk-weaving centres in India and Burma.

The first stage in silk-weaving is the twisting of Kora-silk. This is a staple industry of Saurashtra women. As a class, they are well acquainted with rotating small charkas. Women are also used to work at big wheels called *Rhettoes*. These *Rhettoes* are intended for making silk hanks. * During one rotation 14 to 30 hanks are made.

The second stage consists in the twisting of silk in the form of " ∞ ". This new contrivance is called *Dheto*. This is very useful to silk-weavers. Silk has to be made only into warps and there is no sizing process as in the case of cotton.

The final stage is the weaving proper in looms, which is akin to the work of the looms already described in the case of cotton clothing. The Saurashtra women have a knowledge of silk-dyeing in parts other than Madura.

New patterns of weaving are being found out. Especially in embroidery and ornamental works, is this prominent. The ornamental work is done through pedalling itself. One big saree costing from one hundred rupees to Rs. 1,000 is finished in three months. Ordinary sarees are completed in fifteen to twenty days.

The beautiful silk brocades literally interspersed with metallic threads known as *Kincobs* for which Madura is famous, command a limited market even outside Madura.* Madura cloths and turbans with gold or silver thread continue still in great demand.

The weaving industry is an important local occupation of the Saurashtras. The Madura upper cloths and rich sarees command a market throughout the Madras Presidency. The Saurashtra male-workers have shown a remarkable inventing capacity as evident from their many discoveries of new patterns and looms and their warping machine, hailed as the first of its kind. The community owns, among its first ranks, an expert who has had training in British Isles as well.

The handloom though it has got still a bright future as a cottage industry needs the assistance of machinery. The fly-shuttle is still capable of further improvement thereby leading to greater output and saving of time. The "wheel shuttles" of the School of Arts have not yet been given sufficient trial. The inventor of the warping machine is in need of financial help ; it has yet to be patented when only its accredited advantages can be tested and known to the outside world.

Great Britain to-day is spending 7*s.* 2¼*d.* per head on unemployment insurance grants compared with 3¾*d.* before the war. The ratio of unemployment has increased, it is true, but even then the proportion is far too great and the reason is because a vast army of men and women of the "don't want-work" type are abusing State charity. Innumerable cases of married women drawing the "dole" even though their husbands are at work have occurred.

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* One hank is 840 yards collected into a small rotatory thread.

* *Vide* The Hand-book of Commercial Information—Cotton, page 310.

Iron Works at Bhadravati.

By Rao Bahadur S. Srinivasa Iyengar,
Formerly of the P. W. D., Bombay.

Before proceeding with the subject-matter in hand, I may briefly touch on the reason or reasons as to why I thought upon contributing a newspaper article on "The Mysore Iron Works". I am a Mysorean, who spent his active service in the Bombay P.W.D. and retired from it by the end of September last. I had no occasion to visit personally some of the great economic projects undertaken during the last decade in Mysore. Naturally, therefore, I took the earliest opportunity during the last five months of visiting them, as also certain parts of Mysore which I had not seen before. Of the works visited, the Iron Works was one. After a detailed visit to the Central Factory at Bhadravati, the Mines and quarries at Kemmangundi and the Tramways serving the Forests in the Bhadravati Forest Division, the incalculable good which has been done to Mysore in evolving this unique economic project and giving it a practical shape during the period of his Dewanship by Sir M. Visvesvaraya, one of its greatest sons, if not its greatest son in recent times, was deeply impressed on me. Prior to this visit, however, I had heard in far-off Karwar—North Kanara—where I then was, unfavourable reports about its finances, and still worse reports caught my ears as I moved onwards in my tour towards Shimoga and Chitaldrug, *viz.*, that the concern was working at a loss and it was under serious contemplation to suspend, temporarily at least, some of its operations. I need not say that the rumours pained me intensely, and I awaited patiently therefore the official pronouncement of the Mysore Government during the recent Birthday Session of the Representative Assembly. From the Dewan's speech in the Assembly, it is made clear that the latter portion of the rumour has no foundation, while the former has. Considering, therefore, that next to the Iron and Steel Industry of Tata's at Jamshedpur, Mysore is the only place in India where such a rare undertaking of surpassing educational interest and economic value has been started, it occurred to me that I should publish my humble ideas regarding it for the serious consideration of my Mysore brethren, which accounts for this contribution.

A Description of the Works.

I see from the list of literature I could, through the kind courtesy of the officers at Bhadravati, get to read on the subject, that a paper on the Design and Construction of the Works by Mr. J. P. Carmody seems to have been read at the 12th Session of the Mysore Engineers' Association in 1923 and published in the Bulletins of the Association for July, August and September 1923. It is doubtful, however, what attention, if any, has been paid to it by the lay Mysore public. I shall, therefore, begin by giving a very brief descriptive account of the Works.

The preliminary investigations for starting an Iron Foundry in Mysore were carried out in 1915 by Mr. Perin of the famous American Firm of Messrs. Perin and Marshall of New York. In pursuance of his recommendations, a scheme for the destructive distillation of wood and manufacture of charcoal pig iron at Bhadravati was sanctioned by the Mysore Government in 1917-18. It consists of :—

1. A Central Factory at Bhadravati, covering an area of about 50 acres and an area 1½ sq. miles, including the New Town, containing about 150 houses for staff quarters.

2. Mines and quarries at Kemmangundi and three other places.

3. Tramways—56 miles—in the forest area, 350 sq. miles of the Bhadravati Forest Division.

No. 1 was designed and constructed under the advice of Messrs. Perin and Marshall & Co. between the years 1918 and 1922 in Bhadravati—on the left bank of the Bhadra river—a railway station on the Birur-Shimoga Section of the Mysore Railways and the blast furnace was blown in early in January 1923, and it has been in working therefore for about 2½ years nearly. It consists of a 'wood distillation' plant capable of treating 200 tons of firewood per day and a 'blast furnace' which has an average daily outturn of 40 to 60 tons of pig iron in 4 'casts', each cast recurring at the end of every 6 hours. All these have been laid out, as they should be with a view to future expansion. The 'wood distillation', or 'Carbonization Plant, as it is technically termed, converts daily 200 tons of firewood into 60 to 80 tons of charcoal and other by-products *viz.*, Calcium Acetate, Methyl Alcohol and Tar. These by-products are obtained by the condensation of gases formed during carbonizations of the wood. The condensed pyroligneous acid liquor is collected in large wooden tanks and pumped from there

to the 'still' house. Such of the gases as are non-condensible are contrived to be burnt as fuel. The 'still', or more appropriately the Chemical house, where the condensed pyroligneous liquid is treated, is situated to the east of the blast furnace. The liquid consists of 80 per cent of water with varying percentages of by-products named above. Of them the heavy tar settles down in the tank and is drawn off from time to time. The clear liquid is then evaporated and the soluble tar and oil separated. The liquor thus freed is neutralized with slaked lime and then pumped into steel tanks. After settlement in them for some time, it is again pumped into an overhead tank and fed under constant pressure to a continuous 'still' where crude alcohol is drawn off and collected in suitable vessels.

Commercial Products Produced.

Before leaving the subject of wood distillation it may not be uninteresting to have some idea of the commercial products obtained in the process. To begin with, the wood, to be operated upon, should be harvested, properly air seasoned, decayed wood and heavy bark being rejected and none but sound solid wood about 2 inch diameter being used. The average yield of different products in distilling 4,000 pounds of 21 kinds of Mysore fuel wood has been as under :—

1. Methyl alcohol	7.03 gallons.
2. Calcium acetate	165 lbs.
3. Settled tar	22 gallons.
4. Soluble tar	8.19 gallons.
5. Charcoal	1,278 lbs.

In regard to No. 1, its most important uses are in the manufacture of 'dyes' and as solvent in paint and varnish industries. From the present state of knowledge it cannot, it is said, be considered as a cheap motor fuel. No. 2 finds its most important use in the manufacture of acetic acid and Acetone. No. 3 has, by a process of double distillation, its unquestioned use in the manufacture of a high grade wood preserving oil comparing very favourably with similar products of American manufacture. A sure way for a successful business is thus opened here. There are other, though not such chemically and physically sure, means of using it, *viz.*, a 'wood preservative' for rough work, or better still as a 'flotation oil' for the recovery of zinc, copper and lead ores. In the process of double distillation of the product, 'pitch' which is so useful for electric insulation is obtained. No. 4, when the selection of wood is satisfactory, is proved to be a stuff which compares favourably in every respect with American charcoal. Thus it is seen that the scheme is distinctly suggestive of greater expansion, and the period of 2½ years that has elapsed since the operations actually started is far too short a period to judge of its full benefits.

Mechanical and Electrical Sections.

Added to the Factory are the Mechanical and Electrical sections also. The former contains the boilers, foundry and machine shops and the latter contains the 'generators' driven by steam engines generating 3 phase, 480 volts, 50 cycle alternating current. The steam required for the plant is about 20,000 lbs. per hour, which is supplied by 3 out of 5 boilers working at a time.

There were to be seen very encouraging economic developments in the foundry section, where pig iron was being used in manufacturing C. I. pipes, C. I. lids or man-hole covers, etc., for which there have been heavy orders already.

Electric light is provided for the Plant, Offices and Town. A telephone system with 17 instruments connects various parts of the Plant and Town. There is a water supply scheme from the Bhadra river to supply no less than 3 million gallons per day required for working the plant and supplying the town.

Tramways, both metre and 2-foot gauges covering a total length of 10 miles traverse the plant area. The whole work of charging and pulling out of buggies, supplying charcoal and ore to bins, despatching materials from and to railway stations, removing pig iron and slag from the furnace are all done by locomotives worked by steam and skip-cars worked electrically.

Other Interesting Features.

This practically finishes the general salient features to be met with in the plant area by a casual visitor. I shall now review briefly some instructive features noticed outside the area under the following heads :—

A. The forest area and its tramways.

B. The mining area at Kemmangundi on the Bababudan Hills, and

C. The Ropeway connecting the Upper Terminal near Kemmangundi with the Lower Terminal at Thangebyle, a distance of three miles horizontally.

As already observed, about 350 sq. miles of forest area have been marked off for supplying wood and timber required for the Works, and formed into a Forest Division under an experienced Divisional Forest Officer. It is intersected by about 56 miles of tramways for

transporting forest products and ores from the mines. The fuel is selected from about 20 varieties of woods which have no timber value. It is billetted into specific sizes by manual labour and split in a small saw-mill erected near the factory worked by electricity. Suffice it to say, that each step taken in the preparation of fuel has been the result of experience, and is calculated to give the highest return in charcoal. All the undersized or rejected wood and bark, including saw dust, is used as fuel, giving no room for wastage. In short, close attention is being given for utilizing every waste product.

Up at Kemmangundi on the Bababudan Hills, about 35 miles from Bhadravati by road, there is a rich deposit of iron ore estimated from trial shafts sunk in it to last for many years. The ore, after quarrying, is tested by a chemist who has been stationed there and only such stuff as is proved to yield the requisite quality and percentage of pig iron is allowed to be conveyed to the factory. There are other places besides where quarrying is done which I did not visit, being less important. They, however, supply limonite ore, banded haematite quartzite containing high silica and dolomite. These deposits also are said to be deep and expensive.

The mean sea level at Kemmangundi,—the mine site—known as Upper Terminal is 4,650 nearly, and the tramway from Bhadravati runs up towards it upto Thangebyle, a distance of 23 miles, and there is a fall of nearly 2,100 feet between the two places which are 3 miles distant horizontally. To lower the ore from the mine to the tramway, a 'mono-cable ropeway' has been installed. It is supported on 36 trestles of heights varying from 10 to 60 feet nearly ; is worked by gravity and has a carrying capacity of 30 tons per hour. The ore from the mine is delivered into buckets, which travel with the rope at intervals of 36 seconds, 84 yards apart, and are emptied by a very simple but ingenious automatic tipping arrangement at the unloading station. A bunker wall 200 feet long is provided for the storage of 14,000 tons of ore at the Lower Terminal.

Such are the grand and uniquely interesting features in the design and construction of the Iron Works.

Administration of the Works.

Looking at the administration of the Works, it is seen that on them, roughly speaking, about 4,000 persons under all heads find employment. The management is conducted mostly by indigenous talent in all branches. Mysore and other University Graduates in Advanced Chemistry, Civil and Mechanical Engineering, etc., occupy all responsible places and young men even from the remotest parts of the Malnad with a smattering of education are found in the various branches of the Works, handling with ease different machines and thoroughly understanding their working. One of the most taxing sections in the business is the Furnace 'proper'. I have watched the castings at night also, and I was infinitely pleased to see that the 'graduate' foreman was extremely vigilant and attended personally to every kind of manual work with uniform satisfaction. The charge against the generality of educated Indians is, that they are loathe to do manual labour and are not so keen on the practical side. Every Indian, Mysoreans in particular, should be proud that the Iron Works have been metamorphosing Indian habits, and there is little doubt that, with due opportunities and in time, they are sure to take their stand along with the European in every respect. From the above it seems that to construe the Iron Works as a purely State Industrial concern and no more, and to assess its value by its present finances is to deny to it its incalculable educational value to Mysore, and the prospective material prosperity it has most assuredly in store. It will be a chief auxiliary to the technological Institute in the State, just as the Victoria Hospital in Bangalore and the Sivasamudram Electric Works are auxiliaries to-day, to the Medical College, and the just sanctioned Electric Engineering Section of the Engineering College of the Mysore University and the Research Institute in Bangalore. Every day spent on the Works, raises, though to a microscopic extent, the average industrial level of the Mysorean. Before interfering, therefore, with its working, it would be very interesting indeed to assess the money value of these unseen but unquestionable gains, sure and permanent, to the country. Therefore, no philosopher statesman would suspend the operations of the Works even for a second ; but, on the contrary, would find ways and means of not only continuing it but gradually developing it in every possible way, as it is a sure means of finding useful employment not only to some of the products of the University but to many a hungry souls in the country. To expect such undertakings to take root in Mysore through private companies is not a workable idea, at any rate for some years to come. Local people have neither the experience, courage nor even capital to finance them and outsiders have not in these

days those colossal advantages and concessions they used to have in days gone by. Therefore, it is absolutely necessary that such premier industries as the Iron Works should be financed and worked by Government as object lessons till the State acquires the necessary business qualities and finds the needful trained talent amongst her own sons to work them economically.

Some Suggestions.

Considering that even irrigation projects throughout India take generally some time to develop and that their value in famine areas is found in the great protective value they carry, it may not be possible, in view of the depressed state of the world trade, to find profitable sales for the products of the works in the coming year also. Some means of finding the extra expenditure on it for some years more must therefore be thought out to enable it to continue. The following suggestions of retrenchment occurred to me as I was touring round, and they may be valued for whatever they may be worth :

1. The Bhadravati Anicut Division, P.W.D., may at once be abolished and converted into a sub-division and tacked on either to Shimoga or Kadur, as the present work can very well be managed by a competent Upper Subordinate. There seems absolutely no need now for an Executive Engineer.

2. The 2 P.W.D. divisions of Tumkur and Hassan can advantageously be abolished, in view of the great facilities under transport and communication in these days and the comparatively poor expenditure they now incur, and the works there redistributed between Chitaldrug, Bangalore, Mysore and Kadur, thus providing full work for the four charges.

3. The necessity of maintaining four separate divisions for carrying on the public works under roads, buildings and irrigation in and about Mysore may be reconsidered ; one division, it seems, can safely go.

4. The postponement of some of the improvements in Mysore City for a few years only, thus temporarily curtailing the Civil List by a lakh or two.

5. In view of the falling-off of the Excise Revenue, the office of the Excise Commissioner can be closed and tacked on to that of the Revenue Commissioner.

6. Finally, till the Iron Works are fully developed and worked on an economic basis either the present educational cess may be doubled or another cess called 'the Industrial educational cess' levied, as it is sons of the present Mysore people who will in time reap the undoubted benefits of the Works.

Work of Sir M. Visvesvaraya.

I was brought up in the Mysore Engineering atmosphere from my boyhood and have besides spent 29 years of my manhood in the Bombay P.W.D. The first three suggestions therefore are the outcome of my long association with the localities and training in the line. The remaining three are the result of my careful study of the Dewan's recent address and my continuous touch with the march of events in Mysore since 1886. The fourth is also the outcome of my recent study of a book known as 'All about Japan', published by Natesan and Co., Madras, where on page 40 of the book is recorded an extract where the Emperor Mikado went to the help of his Minister by a singular act of self-sacrifice to improve the country's finances. It runs :—

"We have ordered the expenditure of our household to be cut down, so that we may be able to contribute yearly 3 lakhs Yens for the next 6 years to the necessary equipment of the national defences." It does not require any stretch of imagination therefore to expect this little favour from benevolent His Highness the Maharaja of Mysore for a short period, when so much good is likely to accrue to his beloved subjects from the Works.

The Iron Works, along with the Krishnarajasagara Reservoir and the Mysore University, were conceived amongst several other development schemes and materialized during the six years of Dewanship of Sir M. Visvesvaraya. *Every one of them when fully developed is pregnant with colossal good to the country.* Workers in British India know what time and labour are spent in materializing one such project. It speaks volumes, therefore, for the indefatigable industry, unexampled devotion to duty, unique patriotism and versatile genius of Sir M. Visvesvaraya. May he live long enjoying good health and see that the Iron Works are fully developed under his Chairmanship, thus shedding everlasting lustre on the benign rule of His Highness the Maharaja, Sri Krishnaraja Wodeyar Bahadur.

Canon Donaldson of Westminster Abbey, in an address at Sheffield, has described the seven social evils as :—

Politics without work. Wealth without principles. Pleasure without conscience. Knowledge without character. Commerce and industry without morality. Science without humanity. Worship without sacrifice.

Proposed Insurance Legislation.

By "Insurance Expert".

The Insurance Bill, published in the *Gazette of India* of June 20, purports to regulate all forms of insurance business carried on in India. Hitherto legislation in India has been confined to Life Insurance Companies and Provident Insurance Societies, but the growth of the insurance habit in India has necessitated the widening of the scope of the Bill.

There are a few clauses of particular importance to the general public. Clause 10 prescribes deposits for every kind of insurance business with a view to preventing the growth of mushroom companies. Every insurance company must deposit with the Controller of Currency Government Securities of the following value in respect of any class of business carried on in British India, *viz.*—

(*a*) Securities of the face value of Rs. 2,00,000 for Life Insurance business.

(*b*) Securities of the face value of Rs. 1,00,000 for every other class of insurance, including Workmen's Compensation, Accident, Fire, Marine, etc.

Loans to Directors are prohibited except under special circumstances. The annual preparation of a revenue account, a profit and loss account and a balance sheet is made obligatory, and the accounts must be properly audited. The shareholders and policy-holders (clause 33) have a right to copies of the accounts, and clause 38 makes it incumbent on the Governor-General in Council to publish a summary of them. Clause 25 prescribes a quinquennial actuarial valuation of life assurance companies. Clause 31 enables the Governor-General in Council to appoint Inspectors to examine the affairs of any insurance company and Clause 32 confers on the Governor-General in Council power, in the event of his seeing reason to doubt the solvency of any life company, to require an actuarial valuation. Clauses 47 and 48 (*c*) are also important in this connection. It will be seen that, while considerable powers are reserved to the Government of India and while in some respects Government's existing powers of control over life companies are tightened up, the Bill adheres to the policy of the Life Assurance Act of 1912 and reliance is placed for the protection of the public mainly on deposits plus publicity.

Under Clause 29 Insurance Companies constituted outside British India, to which the Assurance Companies Act, 1909, applies, must furnish, in addition to copies of the returns deposited with the Board of Trade, certain annual statements. These statements will show *inter alia* the assets held by the company in India and how much of the premium income of the year is in respect of business transacted by the company in India. These provisions are in accordance with the main principles of the Bill, and will enable the Indian public to decide whether or not to insure with that company. It will also be seen that the exemption now enjoyed by British Companies from some of the provisions of the Indian Life Assurance Act, 1912, has been withdrawn, and that all the Insurance Companies, whether constituted within or without British India, have been placed practically on the same footing.

Commerical bodies and associations will be invited to express their opinion on the Bill.

University Education in India.

In the course of his address at the fifth annual meeting of the Court of the Lucknow University, Rai Bahadur Dr. G. N. Chakravarti, the Vice-Chancellor, mentioned a conservation which he had with the Right Hon. A. H. L. Fisher, who was in India as a member of the Public Services Commission, and who was subsequently Minister for Education in the Coalition Government. Mr. Fisher said that after a careful study of all the problems confronting India he had no hesitation in maintaining that its greatest need was the levelling up of its Universities. "He assured me", the Vice-Chancellor continued, "he was not oblivious of the claims of primary education in view of the introduction of representative Government in India but he felt that the pivotal education was that imparted in Universities, as they supply teachers for secondary schools which in turn should supply teachers in primary schools. Upon the character of University education, therefore, depended ultimately all education and culture in the country, and he was so earnest and enthusiastic in his opinion that he permitted me to give publicity to it with the *imprimatur* of his great name, so that public opinion may veer round to the support of the Universities."

Andhra University Bill.

By "Academicus".

The Minister for Education has now passed the final draft of the Andhra University Bill constituting and incorporating a university for the Telugu country of this province. The bill will come into force on such date and in such area as the local Government may, by notification, direct after the bill becomes law.

The main feature of the university is that it will be an affiliating university. Affiliated colleges will mean existing colleges or those to be hereafter established, providing courses of study qualifying students for admission to university examinations, and will include colleges in arts and sciences and professional, technical and technological colleges. A university college is defined to be a college which is recognized by the university as making provisions for honours and post-graduate courses of study, qualifying students for admission to university degree examinations according to the regulations prescribed. The university will, therefore, recognize university colleges teaching up to honours courses, wherever they may be located within the area.

The powers of the university include the institution and provision of funds for a publication bureau, an employment bureau and a students' union. An important feature is that no educational institution shall be admitted as an affiliated college, unless a university college or a first grade college is situated in certain specified centres such as Vizagapatam, Rajahmundry, Bezwada or Anantapur or within a radius of ten miles from the limits thereof, provided that this condition shall not apply to any college existing at the time of the commencement of this Act, and provided also that this condition may be dispensed with in any particular case if the local Government so direct.

Every student of the university shall reside in a hostel or under such conditions as may be prescribed by statute or ordinance.

Standing committees for the various bodies of the university are prescribed. To facilitate the execution of work by such bodies, the authorities of the university have the power to appoint committees which may include persons other than members of those bodies. It is proposed that the university shall establish under its control and management a university college providing courses of studies in scientific and technical subjects as agreed upon from time to time between the Government and the university. The local Government shall provide the funds necessary for such a college, and will also make an annual grant to the university for maintaining the institution, subject to such conditions as they may impose. The main object of the university is to develop scientific and technical study and to encourage honours courses in certain areas in which they will be concentrated. The university scheme provides for the immediate opening of courses in mining, engineering, marine engineering, electricity, technology and agriculture. A college under the direct management of the university will begin with some or all of these faculties, and will gradually work for providing such other faculties as there may be in demand in the country. First grade honours colleges will be concentrated at the four centres named above. Each centre may specialize in a particular course of study without repeating the one provided at the other centres.

The university scheme aims at the ultimate establishment of more universities for the Telugu area and a rapid development of the study of Telugu and other vernaculars as the media of instruction and examination.

A discovery of far-reaching importance for the industrial future of Japan has, according to the *Industrie-und-Handels-Zeitung*, just been made. In the neighbourbood of the little town of Kuji in the north of Honjiu, in the province of Rickuchu on the Pacific Ocean, iron containing sand has been found which experts declare to be practically inexhaustible. Researches have been carried on during the last seven years to ascertain the percentage of iron that could be extracted from the sand. The undertaking is in the hands of a company at the head of which are many noted Japanese industrialists. The company reports that, with the help of suitable machinery, it was able to extract in one single day from 1,500 tons of sand about 30 tons of raw iron of excellent quality.

The World Forestry Congress at Rome.

Rome, 1*st June* 1925.—It has now been definitely settled that the World Forestry Congress, which is to take place at Rome next year, will be held from 29th April to 5th May. The International Exhibition of Forestry will be held at Milan from 12th to 27th April at the same time as the Sample Fair.

Favourable replies have already been received from practically all the States which are subscribers to the Institute and represent almost all civilized countries. The States will be officially represented by a Special Committee, mainly consisting of forestry experts. Representatives of many University Forestry Departments and Higher Schools of Forestry, Forestry Associations, Unions and Societies will also be present in Rome on the occasion.

Though the programme of the Congress is extremely comprehensive the subjects to be discussed will be relatively few in number, as it is the object of the promoters to limit discussion to questions of true international importance, which as such can be of real practical value to the forestry work of the individual States. The Organizing Committee has already received notice that contributions will be made by experts with the highest qualifications and of international reputation, a fact which is in itself a guarantee of the success of the Congress. The papers, reports, monographs, etc., which will be presented but cannot be discussed in the meetings will be published in the Congress Proceedings.

Congress members will receive without charge an abstract of the Proceedings, and the other publications containing the reports, papers, etc., will be on sale at a price to be settled later by the Committee, a special discount being allowed to Congress members.

The notice of the International Exhibition of Wood-working machinery and general Forestry products has been favourably received in all quarters, and it is known that a large number of firms belonging to every country will exhibit their specialities. There is, therefore, every reason to believe that this Exhibition will be of particular importance and value in developing international trade in timber, both in the rough and manufactured, and in the machines used in the wood-working trades and those that in any way utilize forestry products.

Persons who desire to receive information as to the regulations for taking part in the Forestry Exhibition can apply to the *Comitato della Fiera Campionaria Internazionale, via* Amedei 8, Milan (6), by which the Exhibition will be organized. The members of the Congress will visit the Exhibition on 27th April 1926 in accordance with the General Programme, which will be issued by the Committee in due course.

Forms of membership of the Rome Congress with the Regulations and Programme will be forwarded by *the General Secretariat of the World Forestry Congress; care of the International Institute of Agriculture, Villa Umberto I, Rome*, by which also information will be supplied to persons interested. Reports, papers, etc., should be forwarded not later than 15th February 1926.

Those responsible for the Congress trust that they will be able to bring together in Rome forestry experts representing all civilized countries, so that with their collaboration a strong stimulus may be given to the advance of Forestry throughout the world, and renewed confidence may be felt in the future of the forest, which is a factor of such importance in human activity and industry.

Bombay University Research Grants.

Notification No. 2854 of 1925, 8th June, issued by the Registrar, Bombay University, states :—The University of Bombay has created a small Research Fund to assist investigators in various branches of knowledge. The Syndicate are prepared to receive applications from research workers for grants to help them in the work they are undertaking. Such grants will be made for expenses for purchase of material, for local expenses where investigation demands them, for the copying of documents or inscriptions, for working up of results, and similar purposes. Applications giving full details regarding the research work which the applicants propose to undertake, their qualifications for the work, the probable amount of the grant required, and the purpose for which it is required, should be addressed to the University Registrar and forwarded so as to reach him not later than *Monday, the 20th July* 1925.

Economics in the West.

The Industrial Progress of Mysore.

London, 1st June 1925.—On May 22, Sir Alfred Chatterton read a paper on "The Industrial Progress of the Mysore State" before the Royal Society of Arts (Indian Section). The lecturer referred to the fact that, on the whole, the Indian States had progressed at a slower rate than British India : and that, though covering two-fifths of the surface of India, they only support one-fifth of its population. As regards the industrial conditions prevailing in India, he said that the great mass of the people had only been indirectly affected by the industrial movements occurring in their midst, but the enormous expansion of the external trade had brought the products of the world into every village and had excited new aspirations which inadequate means render it impossible to gratify. The discovery of gold at Kolar laid the foundation of the industrial prosperity of Mysore State. Up to the end of 1923, the Kolar Gold Fields had produced over 15½ million ounces of gold. The mines are among the deepest in the world, having reached, in their bottom workings, a depth of well over six thousand feet ; but their wealth is by no means exhausted. The royalties so far received by the State amount to over three million pounds, but the direct contribution is by no means the only advantage the State has received from the mines. Where there was formerly a barren waste, there is now a flourishing settlement with a population of about ninety thousand ; and it was the demand for power at the mines that rendered it possible to start the hydro-electric generating station on the Cauvery, the subsequent development of which has done so much to increase the wealth of Mysore. The works were opened in 1902 and, since then, on a capital expenditure of 175 lakhs, the net income has been over 300 lakhs. The sugar industry is progressing and, with the introduction of power-driven mills, continues to increase. The imports of sugar into India are very large, but it is noteworthy that, even now, India grows enough cane to supply her own needs, were it not that at least one-fourth of the supply is wasted through imperfect extraction. The distillation of sandalwood oil, which is a State monopoly, has been very successful. Originally, the practice was to sell the wood ; but, of late years, the State has extracted and sold the oil itself. Up to June 1924, the State factories had sold 850,000 pounds of oil for about one and a half million pounds sterling, at a net profit of about £200,000. The sandalwood of the Madras and Coorg Forest Departments is still sold and it is estimated that during the same period, the receipts are less by over £150,000 than if the oil had been sold after distillation. Mysore also produces about £700,000 worth of silk every year. An irrigation dam is being constructed on the Cauvery, which is expected to irrigate about 125,000 acres, most of which will be put under rice unless special efforts are made to assist the cultivators to grow sugarcane. The area mentioned should easily produce a million tons of cane yearly, connoting an annual yield of at least 100,000 tons of sugar. As India imports about four times this quantity there is an assured home market which, at the present time, is protected by a tariff of 25 per cent. Mysore also offers a great opportunity for the cultivation of sisal hemp, which can be grown on land almost useless for ordinary crops. If 100,000 acres of sisal hemp were established, the crop would be worth, on the spot, over £900,000 and, as the land occupied would be on or beyond the margin of ordinary cultivation, it would prove an extraordinarily valuable insurance against famine. Concentration of cultivation is essential if such crops as sugarcane and sisal hemp are to be subsequently treated by efficient modern machinery. The peasant will not grow the crops until he is certain that he can dispose of them : the capitalist will not put down the machinery until the crops are visible : and so nothing can be done unless Government can take the initiative and, in the general interest of the community, guarantee the peasant against loss at the outset.

World's Advance and Indian Women.

Speaking at a luncheon of the British Commonwealth Women's Conference on July 10, Lord Meston declared that, in the intellectual, artistic, social and political renaissance of India, women must participate. It was a question whether they could qualify themselves to take their proper part unless they receive a far greater measure of education and considerably greater physical emancipation than they enjoyed at present. The greater danger of a reaction in India, of a rigid, archaic, orthodox creed pulling against Western civilization, had

been advanced by a political leader. If such a reaction became effective, the freedom of women, of which there was at present some foreshadowing in the political sky, would be definitely set back.

Lady Chatterjee pointed out that the women of India laboured under many disadvantages, but in some respects they enjoyed greater privileges than their Western sisters. For instance, they were able to administer their own property and to hold it apart from their husbands, and they were also rulers of large estates. The speaker cited the case of the efficient administration by the Begum of Bhopal. The history of the women's movement showed that it was not likely to follow Western lines. The women of India exercised a stronger influence at home, in addition to taking an interest in politics, winning political power for themselves, and succeeding in it without raising strong sex antagonism. Indian women had faced many obstacles, such as lack of educational facilities, the early withdrawal from schools, the purdah system, etc.

Lady Chatterjee dealt specially with infantile mortality and pointed out that it ranged from 287 to 400 per 1,000 in the different Provinces of India, which were also sadly lacking in medical aid for women, while sanitation required attention. Women were taking an increasing part in industry with the result that more women Factory Inspectors were required. The speaker also complained that, although many subjects at the Geneva Labour Conference affected women, there was not a single woman delegate.

The Round Table.

The Indian item in the June issue of *The Round Table* deals with the Indian rural problem. The writer enumerates a number of disabilities under which rural India labours: the joint family system under which the workers of a family have to support its idle members and agricultural holdings have to be sub-divided and fragmented: early marriage, with its check on mental and physical development and its high rate of infant mortality: the seclusion of women, leading to economic waste of power and faulty upbringing of children: caste prejudices, restricting the free movement of labour: veneration for animal life which entails the retention of useless animals and refusal to destroy harmful ones: the subordination of economic development to religious prejudices: the shortage of good roads and medical service, which lead to uneconomic forms of transport and failure to avoid preventible disease: illegal exactions by landlords and others: indebtedness and the tyranny of the moneylender: illiteracy, which leaves the peasant an easy prey to exaction: the long periods of enforced idleness that are inseparable from the farming of holdings of inadequate size: the lack of effective agricultural tools: the want of properly constructed fences: the persistent use of flimsy materials: and the perennial strife, not only between Hindus and Mahomedans, but between the various castes of Hinduism and the different sects of Mahomedanism. The writer finds the remedy in education: in the establishment of a rural school within reach of every village in India, where the children can be taught on the modern system whose "essence is that the child teaches himself, the teacher's function being to guide", and where practical demonstrations in agriculture and elementary medical knowledge, especially of preventive medicine, can be given.

The article includes an interesting discussion of the cattle problem in India: and gives statistics to prove that approximately 19 per cent of the 146 million bovine cattle in India are "useless mouths", the feeding of which is estimated to cost something like 130 million pounds a year. This conclusion is particularly interesting when one remembers that one of the most persistent cries of the Indian agitator, of late years, has been raised against the depletion of cattle by the British Government which allows their slaughter for food and for the export trade in hides and skins. The writer does not attempt to estimate the loss incurred by failure on the part of the peasant to defend his crops against destructive animals; but he draws attention to the fact that the annual economic loss estimated to be due to surplus cattle is four times the land revenue of British India. What other country on earth, he asks, pays such a staggering price for the veneration of an animal?

Canadian Water Power.

After a long debate the Dominion Parliament has adopted a resolution declaring that the export of hydro-electric power from Canada should be permitted only on a yearly license, and that no license for export beyond those already granted should be issued except with the concurrence of the province or provinces in which it is proposed to develop such power and the other provinces adjacent to such development and interested therein. The resolution was accepted by Mr. Meighen, the Conservative leader, and carried without a division. As a result of this action the export of power

will probably cease to be an issue in Federal politics.

Messrs. Brunner, Mond & Co.

A very interesting account of the foundation and early days of the great firm of Messrs. Brunner, Mond & Co., Ltd., of Northwich, England, was given by Professor H.B. Dixon, F.R.S., of Victoria University, of Manchester, in a lecture on the life and work of Dr. Ludwig Mond, F.R.S., which he delivered a short while ago. After Brunner and Mond, both then employed by the firm of John Hutchinson, had decided to launch out together as manufacturers, Mond obtained a licence from Solway to work the ammonia process for the production of caustic soda from salt. The two young men, taking their courage in both hands, embarked upon the great adventure. They pooled their resources, borrowed money from their relatives and friends, arranged for overdrafts, and even for mortgages upon their works and site—when they acquired them. As a site they hit upon the Winnington Hall estate, where they produced their first soda in April, 1874. It was a year of trial and stress ; they both worked all day and took the night shift by turns. Many troubles arose from defects in plant, and Brunner hardly exaggerated the facts when he said that "everything that could break down did break down, and everything that could burst did burst". During that first year, they made 833 tons of soda and lost about £5 in every ton ; in 1875 they made 2,400 tons and a profit of £1 a ton. The tide had turned. Two years later the plant was doubled and in the following year they took over the management of the rival Solway plant which had been erected at Sandbach. In 1881 the limited company of Brunner, Mond was formed, mortgages were paid off, and the era of expansion and success was fairly entered upon.

Artificial Silk in Japan.

Reports from Japan state that much new development work is being done with artificial silk. The importation of artificial silk into Japan in 1923 was 2,200% higher than in 1912. It is interesting as showing how a nation for centuries noted as experts in sericulture development work, has cultivated a taste for artificial silk, and realized that artificial silk is the most important fibre next to cotton in the world. Japan is represented by two artificial silk plants, and arrangements are being made to increase production by the erection of new plants. It is reported that Mitsui Bussan Kaisha is establishing artificial silk plant in Japan in combination with the Dupont Company, U.S.A. *The Mainichi* states that the Mitsui Company is reported to have spent 200,000 yen since last year in investigation in this connection, and adds : "The industry in Japan has a long history behind it, yet almost all attempts in this direction have failed, only two being left in business—the Imperial Artificial Silk Manufacturing Co., controlled by the Suzuki interests, and the Asahi Silk Fabric Co. The former is now able to stand on its own legs by improving its manufacturing processes, while the latter has secured a German patent, under which the manufacture will be under the supervision of German experts.

The Newspaper as Teacher.

To open a newspaper is to be rescued from the sense of the vanity, staleness, and unprofitableness of life. The newspaper man has his eye on the perpetually happening dawn of things of dynasties and revolutions, of arts and careers. He can never fall into that routine which is the canker of most careers and most philosophies.

He is constantly rousing others to the eager observation of new things under the sun. Because he writes only about the moment, nevertheless, like the poet, he believes in that moment completely. Like the best of the Epicureans, he crowds the instant with intensity and meaning.

For the general populace, he is the freshener and vivifier of the moments as they pass in the market-places and tumults of the world. He is writing the daily epic of his generation, though like all other epic poets, he is absorbingly concerned with one episode at a time.

Nearly all that the adult of our generation has of living contact with science, art thought and the larger issues of civilization, he gets from newspaper. The professors reach but a handful ; the preachers not many more ; the poets scarcely any. Newspapers are the living and actual teachers of our generation.

It is through the constant rat-tat of head lines that democracy, social justice, and world unity can be translated from the lingo of abstractions into the language of daily practice. Except for newspapers the voices of the learned would be a silence in a void.

'What is a Communist ?' One who hath yearnings
For equal division of unequal earnings :
Idler or bungler, or both, he is willing
To fork out his penny and pocket your shilling.

Notes from U. S. A.

Exploitation of Immigrants Checked.

New York, 1*st June* 1925.—The Committee appointed last year by the New York Legislature to investigate the exploitation of immigrants has made its report to this year's Legislature with recommendations designed to prevent further fleecing of foreigners by their fellow-countrymen. In conducting its official investigation the Joint Legislative Committee enlisted the aid of various civic and governmental agencies, appointing seven sub-committees with Chairmen selected for their experience and grasp of the problems of money transmission, social service, labour and naturalization. Supreme Court Justice Cotillo, who was then a State Senator, was made Chairman of the Committee. With the aid of *The World* and *The Evening World*, he uncovered abuses practised upon ignorant aliens by steamship agents, questionable private banks, foreign exchange brokers, notaries public, employment agents, workmen's compensation administrators and medical quacks.

One of the most serious abuses uncovered by the investigation was the failure of transmitting agencies to deliver money received to be sent abroad. Among the recommendations the Committee makes to the Legislature is one that express and steamship companies be allowed to transmit money only at their established offices and through their own employees. This would do away with the present practice of steamship companies of paying commissions to various agents to perform these duties and would make the steamship companies responsible for the conduct of their employees. The Committee would also make it unlawful for any agencies except banking institutions, express, steamship and telegraph companies to transmit money to foreign countries, and would also provide for the regulation of the sale of steamship tickets.

Notaries public, under the Committee's plan, would become Commissioners of Oaths and would be placed under substantial bonds. It is also recommended that the Workmen's Compensation Law be amended so that payment to a non-resident alien will be full value instead of one-half and so that non-resident relatives of an alien shall be eligible to compensation to the same extent as resident relatives. The Committee would leave to the discretion of the Legislature whether employment agencies should be licensed and regulated by a uniform State law or continue as at present under local supervision.

Building on Quicksand.

"For the United States to plan its agricultural future on the assumption that Europe may be induced to buy large quantities of American foodstuffs at higher prices than now prevail would be to build on quicksand," is the conclusion of the Institute of Economics, based on an exhaustive study of European needs, European purchasing power, and the competition offered by other food-producing countries. "The limited European market which now confronts the American farmer," says the Institute, "is the result of conditions which were developing even before the war. About the turn of the century American agricultural exports began to decline, owing to a combination of influences. European countries were increasing their own production of foodstuffs, and the competition of Canada, South America, South Africa, and Australia for the European markets was increasing. At the same time, the growth of our own domestic market was lessening our exportable surplus.

"The Great War reversed this current for a time. Not only were the European demands for foodstuffs increased; but, in consequence of the shipping problem, the United States became the most available source of supply. In response to the increased demand and to the cry 'food will win the war,' food production was greatly increased. Prices were high and unprecedented prosperity came to our farmers, resulting in the disastrous land boom with which all are familiar. When the war ended, it was naively assumed that these war-time demands and war-time prices would continue indefinitely. Immediately following the Armistice they did continue for a time, being made possible by additional extensions of credit. This piling up of debts to the United States, however, could not go on forever, and the inevitable collapse came in 1920. To-day the pre-war trend of decreasing exports has been renewed in intensified form. Europe's agricultural production is being restored faster than her industry, and, consequently, than the buying power of her cities. And the competition of rival producing areas is keener than ever before. The whole economic tide is against an increase of European demands

and high prices for American foodstuffs in the immediate future. The solution of the farmer's ills must therefore be sought in internal re-adjustments to a changed world situation."

EIGHTY-EIGHT PER CENT OF WORLD'S AUTOS.

A compilation made by the United States Chamber of Commerce shows that there were registered in the United States last year a total of 15,092,177 motor vehicles, of which 13,464,608 were passenger cars and 1,627,569 trucks. The world registration of motor vehicles has been determined as 18,023,584 so that the United States possesses eighty-eight per cent of all the motor vehicles there are in existence.

Thirty-four per cent of the passenger cars built in 1923 were of the enclosed types, the figures given being 2,434,360 open and 1,259,877 enclosed cars. In addition to the value of the cars and trucks built last year the industry sold parts and replacements which bring the total business of the industry for the year to a grand total of $2,804,852,716.

The exports of motor vehicles in 1923, including those from factories in Canada owned by United States automobile companies, were 328,999 cars and trucks. The Canadian production of American-designed cars was 148,791.

Further figures concerning the American motor vehicle industry give the total capital invested as $1,571,722,411 ; wages and salaries paid as $579,002,686, and number of employees in all branches as 3,105,350, of whom 318,100 are workers in automobile factories and the others are employed in the sale and service of cars. There were last year ninety manufacturers of cars in the United States, and 147 manufacturers of trucks, and the total number of dealers was 43,588.

ELECTRIC "SUNLIGHT" AND PLANTS.

For speeding the growth of young plants and to give them a richer, greener and more vigorous appearance than ordinary specimens, electric lights have been directed on them for several hours each night by American experimenters. Many thus exposed are reported to have grown to almost twice the size of those subjected to daylight alone. Experiments showed that nearly all plants having large leaves, or thick clusters of small ones, were greatly stimulated by the artificial "sun". It is believed that with proper temperatures and moisture regulation, the process can be made to produce crops of vegetables at much earlier periods of the year than is now possible. With expensive types of flowers the electric light may be used to quicken the development of the blooms which are generally in seasonal demand, such as Easter blossoms and Christmas plants. In some cases, as in beans, celery, lettuce, snap-dragons, and mignonette, beginning of growth was hastened from four to twelve days, while other flowers bloomed longer and were stronger than those that received only the benefit of daylight.

Indian Stores Department.

The Administration Report of the Indian Stores Department for 1923-24 is issued. Mr. Pitkeathley, Chief Controller, observes that owing to the financial stringency only two lakhs, instead of 12 lakhs according to the original plan, were available during the year. The Department, however did a great deal of increased work, for instance, the increase in the metallurgical inspectorate. Sixty per cent of these represented the price for the stores manufactured in India.

Mr. Pitkeathley points out that the disappointing feature of the year's work was the reluctance shown by the Central Departments, other than the Army and the Public Works Departments, at Delhi, to utilize the agency of the Stores Department to a larger extent than hitherto. The voluntary attitude of some of the Provincial Governments, particularly those of Bombay and the Punjab in connection with the Lloyd Barrage and Sutlej Valley Projects was on the other hand encouraging.

He holds that the permission granted by the Government for the purchase of machinery from agencies in India led to the purchase at economical prices in India of stores, which would otherwise have been indented for from England.The question of the rupee tender urged by the Assembly was still under serious examination. Its acceptance would have a profound effect on the activities of the Department. The question was also far-reaching, not only because of the probable repercussion in the industrial and commercial life of the country, but also in its effect in the sphere of administrative finance and efficiency. He hopes the decision of the Government would be announced shortly. The question of giving the services of the Stores Department free to the other departments of the State was also under consideration.

Canadian Trade and Finance.

Canadian Manufacturers' Association.

Montreal, June 1st, 1925.—The tone of the Annual Convention of the Canadian Manufacturers' Association which met in Hamilton this past month was more cheerful than for the past couple of years. It may not be an exaggeration to state that many of the manufacturers of Ontario and Quebec feel that, although the situation is still spotty, the end of the depression is at hand. Over-production rather than under-consumption seems to be the factor which is upsetting the Pacific lumber market, but general business conditions on the Pacific Coast seem to be on the mend. The second spring trip of the Lunenburg fleet resulted in quite satisfactory fares and good prices have been obtained. The Maritime potato and lumber markets remain poor, and the strike situation at Sydney is acute. While there is still a long time before harvest, the soil, moisture and general grain conditions are so excellent that the reports from the Prairie Provinces are more optimistic than any that have been received for some years.

Water Power.

While it has always been considered inevitably necessary that the Industrial Revolution in Great Britain and the United States should have been accompanied by the evils which result from intense concentration of population in a few large cities, it is not generally realized that a like industrial revolution, in Canada, is occurring without producing the same results. In this new era of electrical invention and improved transportation, industrialization is taking place under conditions of comparative decentralization.

Although the gradual fall in per capita imports shows that Canada is better and better able to supply many of her own needs, the rapid increase in value of Canada's manufactured products requires some better index than is furnished by the study of exports and imports. One of the most indicative measures of a country's industrial progress is furnished by its power consumption, and although the following chart merely pictures the increase in water power production in the various provinces of Canada and by no means measures the total power consumption, as it does not include steam power, yet it portrays one phase of progress, in which Canada's development has been far more rapid than is generally recognized.

Within the last four years there has been a 40 per cent increase in water-power production in Quebec, more than 50 per cent in Ontario and 25 per cent in British Columbia ; most of the provinces are using twice as much water-power as they did ten years ago. The present development is equivalent to that which would be secured from three hundred million dollars' worth of coal in a year, and each year is adding hundreds of thousands of horse-power to that already developed. The following quotation from "Hydro-Electric Progress in Canada during 1924" issued by the Dominion Water Power and Reclamation Service, gives a summary of the present situation :—

"Not only was a substantial increase recorded in the total installation but many large projects were advanced to such a state that a further extensive increase will be effected during the year 1925. More than 300,000 h.p. were added during the year, bringing the total installation in the Dominion to a figure of 3,569,275 h.p. while with the installations nearing completion this figure will be increased by more than 600,000 h.p. during 1925.

"Special interest attaches to the activities of the present time when compared with those of a few years ago, in the magnitude of individual developments and the speed achieved in their construction. Where a few years ago blocks of ten to twenty thousand horse-power were thrown upon the market, now plants in excess of one hundred thousand horse-power are brought into operation in a single year. Modern construction methods have also advanced to meet the demand for speedy development so that it is not uncommon for plants of large magnitude to be completed within the space of twelve months. Practically every province is represented in the year's activities.

"The growth of water-power development in Canada has been most striking and there is every reason to believe that the rapid adaptation of electricity to new uses will greatly accelerate the past rate. Chief among these new uses may be enumerated the electrification of steam railroads, the application of electric heat to manufacturing processes and the extension and use of electrically heated steam boilers for process steam. Canada's strategic advantage in the location of large reserves of water-power within transmission distance of her centres of population should attract special industries to these centres in increasing numbers, and the added population accruing therefrom would at once create an

added market for power for domestic and municipal uses."

The following table gives the latest figures concerning the potential and developed water-power in each province. In connection with these figures it should be noted that technically available water-power is not always accessible so that it is difficult to estimate just what proportion of this power can be readily developed :—

Province	Available 24 hour power at 80 per cent efficiency at ordinary 6 months flow Horse-Power	Developed Turbine Installation Horse-Power
British Columbia ...	5,103,460	355,517
Alberta ...	1,137,505	33,067
Saskatchewan...	1,087,756	.....
Manitoba ...	5,769,444	162,025
Ontario ...	6,808,190	1,445,480
Quebec ...	11,640,052	1,116,398
New Brunswick ...	120,807	44,539
Nova Scotia ...	128,264	54,940
Prince Edward Island ...	5,270	2,239
Yukon and Northwest Territories ...	275,250	13,199
	32,075,998	3,227,414

The possibilities in Quebec, Ontario, Manitoba and British Columbia are so great that the potential development in any one of these four provinces is greater than the whole amount now being used throughout the Dominion. In Quebec alone, the potential water-power production is equivalent to more than a billion dollars worth of coal a year. We are scarcely using one-tenth of the power available.

When one realizes how difficult a matter it would have been to attempt the prediction of the changes which were wrought by the invention of the cotton gin, the steam-boat, the locomotive, the automobile or radio, one hesitates to suggest the transformations which must take place in Canada as a result of the utilization of this vast energy. It is only too easy to live through events which transform civilization, without the perspective to realize their significance and Canadian power development is not a matter of the remote future.

Canada's chief commercially accessible power resources lie within a narrow strip of territory bordering the United States and because of this geographic fact, the taxation of power export seems to be a particularly available source of revenue. If power export is once started on a large scale it would involve the immediate construction of transmission lines costing millions of dollars. The United States already faces an acute shortage. Under these circumstances, and particularly in case large communities in the United States come to depend upon us for light, heat and other necessities, the future cutting off of this power is bound to be regarded as an unfriendly act. Yet it is power from the area referred to above which must be regarded as Canada's most substantial asset. At the present rate of development, Canada will be using all her easily accessible power within twenty years. Canada must conserve this her most immediately valuable resource, and we feel that the best interests of Canada demand the unqualified refusal to export more hydro-electric power. We are therefore glad to mention the following resolution which was passed by the House of Commons, June 15, 1925 :—

"Resolved, that in the opinion of this House the export of hydro-electric power from Canada be permitted only on yearly licence, and that hereafter no licence for the export of power beyond those already granted should be issued except with the concurrence of the province or provinces in which it is proposed to develop such power, and of any other provinces adjacent to such development and interested therein."

The Dominion Bureau of Statistics.

The greatest single factor contributing to industrial waste is the lack of power to predict the rise and fall of prices, and the only remedy for this waste lies in the dissemination of more accurate information concerning demand and supply. The world over, executives are recognizing this fact and are demanding more and more accurate industrial statistics in order that they may direct their business more wisely. In agriculture, accuracy of crop prediction makes farming profits more stable, and reduces the difference between the amount received by the farmer and the price paid by the consumer. In industry, business and manufacturing risks are reduced by increased knowledge concerning market conditions. Although the cost of the compilation of such information is prohibitive for the particular concern, yet such information once collected constitutes the best possible insurance of the stability of industry. Even government itself may become scientific only when decisions are based on the far-sighted use of accurate data. As economic conditions tend to become more and more complex there is a general increased necessity for accurate and thorough statistical data.

For many years, other countries have been attempting to eliminate the useless expense

due to duplication of statistical work in non-co-ordinated government bureaus. Only recently for example, Mr. Herbert Hoover has made much valuable information available to business men in the United States, without increasing the governmental expenditure for statistics, through his efforts in the direction of securing better inter-departmental co-operation. Owing to the far-sighted policies of the present director, Mr. R. H. Coats, the Dominion Bureau of Statistics is at the present time one of the most efficiently organized statistical organizations in the world. The comparatively small expenditures devoted to this Bureau permit the collection and distribution of information, the value of which will be more and more generally recognized as these records are more widely used by Canadian executives.

The monthly and annual "Trade of Canada Reports" compiled by the External Trade Branch of the Bureau are a constant source of information to anyone interested in the progress of Canadian foreign commerce, while the crop, forestry, fishery, mining, manufacturing and transportation reports give surprisingly complete information concerning internal production and trade. The single fact that all government departments use the same general scheme of classification does much to increase the value of the information available. In most countries, conflicting classifications are used by Census, Customs and Transportation Departments, so that information secured from any one of these sources may have little or no relation to the records secured from other sources.

To a large extent Canada's prosperity depends upon the production of raw materials such as grain, lumber, woodpulp and fish. The rise and fall of prices in such commodities is much more marked than is the cycle for finished products, so that price indices and other information aiding sound price predictions should be more valuable to our business men than to those of many other countries. The pamphlets, on prices and price indices, compiled by the Internal Trade Branch of the Bureau, co-ordinate information secured from all other branches in order to give the best possible material on price relationship in Canada and foreign countries.

Measurement of the value of statistics to business is difficult. In other countries where statistics are gathered and compiled by each department independently, it is far easier to show the necessity of an appropriation for the department, sufficient to cover such work. In Canada, where all work of this kind is done more efficiently under a single Bureau, the expense of the Bureau may seem large, but statistics of this kind constitute the book-keeping of the nation ; and any concern which wishes to conduct a sound business, should be careful that its book-keeping presents a maximum amount of information concerning the condition of that business.

Japan's Cotton Trade.

In view of complaints which are sometimes heard as to effective Japanese competition with Lancashire in cottons, the actual position of Japan as a producer of yarn and cloth is of interest. The latest statistics of production in the Japanese centres shows a steady, moderate, rather than a rapid, advance. While the number of looms in Japan has doubled in about ten years, recent additions to weaving machinery have not been considerable. In the first half of last year, the number of looms working was 53,317, an increase since the first half of 1919 of 13,862. Of spinning mills, the average number in operation was 55, with a spindleage of 4,036,456, an increase of 1,750,000 on the earliar period. The average production of cloth per loom last year was 53.90 yards per day of 13.12 hours. In the spinning mills the working hours were 20.6 on rings and 28.2 on mules, in two shifts. The average wages per shift were a fraction over 3s. 1d. in the case of men, and 2s. 5½d. in the case of women! The Japanese spinner and manufacturer has a great advantage over his European rivals in the cost of labour, but his progress is not alarming.

"Slave Labour" in Kenya.

'Two thousand European settlers (of Kenya) are, in effect, aristocratic landowners, working the land with what is little better than slave labour.' The foregoing is not the opinion of an Asiatic settler of Kenya, nor even of that 'muddle-headed' man Dr. Leys—that is how a correspondent from Kenya in an Anglo-Indian paper once described the writer of 'Kenya'. The author of the statement is Mr. Harold Cox, editor of *Edinburgh Review*. The Nairobi correspondent of the *Times of India*, who is apparently a retired Anglo-Indian (old style), of course, does not approve of the statement.

Indian Economic Notes.

Director of Industries for Bombay.

As a result of the vote of the Legislative Council in March 1924, the Government of Bombay abolished the post of Director of Industries and the main activities of the Department were transferred to other officers. The control of the Factory, Boiler and Smoke Nuisances Departments was transferred to the Collector of Bombay and the management of Research Scholarships to the Director of Public Instruction. The Pottery section continued to be in charge of the Pottery Expert of the Sir J. J. School of Art and the control of weaving demonstrations and weaving schools was entrusted to the Registrar, Co-operative Societies under the guidance of the Assistant Director of Industries who was subsequently designated as Superintendent of Industries. The latter was also placed in charge of the records and library of the Department, continuing to carry on its routine work. The Legislative Council has since expressed its desire that the Department should be revived. The Government have, therefore, decided to re-organize the Department under an Indian Director of Industries, assisted later on, if necessary, by a Deputy Director. The re-organized Department will be put in charge of the present Superintendent of Industries, who will be called the Director of Industries, and he will continue to hold the appointment till the date of his retirement from service. The post will be advertised in due course so as to secure the services of the best man available. The re-organized Department will confine itself to the following activities :—

(1) Supply of commercial intelligence to private enterprises.

(2) Professional or technical advice and assistance to minor industries.

(3) Demonstration in cottage industries, especially weaving.

(4) Technical Education.

(5) Experimental and demonstration work in Rosha oil and fish oil and the manufacture of magnesium chloride.

(6) Fisheries (including the cultivation of Oysters).

The minimum area to be granted for cardamom cultivation in Mysore State has been reduced from 5 acres to 2 acres.

The Bombay Government have, in pursuance of their policy of gradual abolition of tolls, ordered the closing of eight more tolls on eight different Provincial roads, one of these being on the Bhatkal—Mysore Frontier Road.

The Government of Bombay has issued orders that in filling posts under the Local Government or authorities subordinate to it, preference should be given, as between equally qualified candidates, to persons who are inhabitants of the Bombay Presidency or of the Indian States in political relations with the Government of Bombay.

Piece-Goods Statistics.

The total imports of woollen piece-goods into India during the year 1924-25 were valued at Rs. 261 lakhs against Rs. 178 lakhs in the previous year. In quantity the imports amounted to 11.8 million yards against 7.5 million yards. The imports from the United Kingdom increased from 3,948 thousand yards in 1923-24 to 6,015 thousand yards, while Italy and Japan increased their shares from 621 thousand yards to 1,678 thousand yards and from 532 thousand yards to 1,047 thousand yards respectively. Germany increased her imports into India by 25 per cent, *i.e.*, from 827 thousand yards to 1,036 thousand yards. Though the volume of the United Kingdom's share increased, her percentage share went down from 52.3 to 50.7 It is worthy of note that this expansion of trade in woollen piece-goods synchronizes with, or rather is helped by, a fall in prices. The average price of a yard has fallen from Rs. 3 in 1922-23 to Rs. 2.37 in 1923-24 and to Rs. 2.19 in 1924-25.

The Progress of Education.

At a meeting in London recently Sir Henry Wheeler is reported to have said that "whereas £11,000,000 had been spent in 1921 upon the education of 4,500,000 people in London, the total expenditure upon the education of the 247,000,000 people of British India was little more." For this most unsatisfactory state of affairs, Government cannot ignore its responsibility. Though finance is ever the excuse whenever there is any talk of large schemes of amelioration, finance never prevented any Government from doing anything that it wanted to do. If the admission by one of Sir Henry's standing of the educational backwardness of the country, were to be followed by a sincere attempt to remedy the present position, we are sure finance would not stand in the way. With the declaration of August,

1917, the goal of Indian political advance has been definitely settled as responsible government and we think our readers will admit that the present rate of progress in education is but a poor preparation for that goal.

Village Life in India.

The importance of the village in India can hardly be over-rated, for whereas in England rural population represents only 20 per cent of the total in India, it is something like 90 per cent. It is, therefore, easy to realize that on the prosperity of the villagers depends the prosperity of this country. The first need of the villager is more education, without which neither the economic nor the sanitary condition of the villagers can be much improved. We have Sir Thomas Munro's testimony in 1813 that education was given in every village in India and that reading, writing and arithmetic were taught to every child. But what is the present situation? Not more than 3.4 per cent of the population are at schools. The corresponding figure for England is 21 per cent; for Australia and Canada between 17 and 20 per cent; and for Japan 11 per cent. The percentage of literacy in British India is on the average only 7 per cent. And yet in some of the more progressive Indian States, the percentage is markedly higher. The average literacy works out to 13 per cent in Baroda, 19 per cent in Cochin and 24 in Travancore. The people of the villages are mostly agricultural. About 75 per cent of them live on agriculture; and it seems that the process of displacement of work from people engaged in industrial pursuits and of their transfer to land which can ill-afford to bear the additional strain still continues.

Iron Ore in Shimoga.

Mr. B. Balaji Rao, Assistant State Geologist, has just reported on certain iron ore deposits in the Shimoga district of Mysore. The investigation was made with a view to ascertaining if there was high-grade ore, low in alumina, in the district to supplement other ores, high in alumina. A search was also made for siliceous iron ore and fluxing material near Bhadravati. Siliceous iron ore deposits were found in some areas, though all were not satisfactory. Some were too low in silica, of good quality. Samples showed an average of 55.34 per cent of iron with moderate amounts of alumina and silica, and a low phosphorus percentage. The outcrop is said to be about 2,500 feet long, and about 925 feet average width.

The Cleanser.

The following piece from the Bengali of the late Satyendranath Datta is addressed to the sweeper caste, regarded as unclean. The English rendering by Rabindranath Tagore, appears in the "Modern Review":—

Why do they shun your touch, my friend, and call you unclean?

Whom cleanliness follows at every step making the earth and air sweet for our dwelling and ever luring us back from return to the wild?

You help us, like a mother her child, into freshness and uphold the truth that disgust is never for man.

Once Lord Shiva had saved the world from a deluge of poison by taking it himself.

And you save it every day from filth with the same divine sufferance.

Come friend, come my hero, give us courage to serve man even while bearing the brand of infamy from him.

Mr. Higginbottom.

According to an American correspondent in the *Leader*, President J. G. Hibben of Princeton University, New Jersey, U.S.A., conferred the degree of Doctor of Philanthropy upon Sam Higginbottom at the 178th Commencement June 15, 1925. Over 4,000 persons were present. Dean Andrew F. West in presenting him for the degree spoke as follows:—'Sam Higginbottom of the class of 1903, missionary in India, Principal of Allahabad Agricultural Institute, Superintendent of the Leper Asylum, and recently decorated by the Indian Government; preacher, teacher and administrator, tireless in effort to improve native agriculture and provide relief for lepers and the blind. His life is a new chapter in romance. His adventure is to seek and save the outcast, heal the sick and avert the dread peril of famine and pestilence; a Christian knight-errant at war with misery and want, a champion of health, hope and peace for that vast Empire.' Principal Higginbottom arrived in the United States a week before this honour was conferred upon him. At the commencement celebration nearly four thousand graduates of the last sixty classes were present for the *alumni* parade. Many of them remained over for the graduation ceremonies on June 15. The degrees were confereed before a large audience assembled before the historic Nassan Hall built in 1756. On January 1st 1924 Principal Higginbottom was awarded the Kaiser-i-Hind Gold Medal.

FINANCIAL HELP TO DISTRICT BOARDS.

The Bombay Government have appointed a Committee of ten members to consider and report on the question of financial help to District Local Boards in Bombay Presidency with the Honourable the Minister-in-charge of Local Self-Government, as Chairman. The Committee have been asked :—

(*i*) to consider whether the existing grant-in-aid system should be replaced by a system whereunder Government should contribute an annual subsidy to District Local Boards on a percentage basis, *i.e.*, Government should give a lump grant bearing a fixed ratio to the actual approved expenditure of the Boards on all objects other than *primary* education, the grant being based on the actuals of the previous year ;

(*ii*) to consider what this ratio should be ;

(*iii*) to consider whether the ratio should be the same for each District Local Board or whether it should vary according to the wealth and natural resources of each Board ;

(*iv*) to consider what additional revenue the District Local Boards are likely to be able to realize by local taxation.

The Committee will hold its meetings in the Council Hall at Poona on and after the 16th July.

VILLAGE PANCHAYETS IN BOMBAY.

The Government of Bombay have also appointed a Committee of twelve to examine the whole question of the future of village panchayats and to consider the practicability and desirability of ways and means by which the establishment of panchayats can be made successful.

The Committee are requested to report on the following points :—

(*i*) To consider generally the present position of Village Panchayats.

(*ii*) To devise means to improve the working of the Village Panchayat system and should these necessitate an extension of the financial resources of Village Panchayats to make concrete proposals for increasing the sources of income.

(*iii*) To suggest such amendments to the present Act as will give effect to the proposals which may be considered necessary.

The Committee will assemble at Poona in the Council Hall on the 13th July 1925 and thereafter from 12 noon to 4 p.m., daily.

INSURANCE COMPANIES BILL.

The text of a new Bill "to consolidate, amend, and extend the law relating to insurance companies" is published in the *Gazette of India*. The new bill will apply, as we state elsewhere in this issue, to all forms of insurance business, including associations of employers, which, without issuing policies or undertaking liabilities, carry on a business for the mutual insurance of their members. The bill provides that life companies shall deposit two lakhs of rupees and others one lakh in Government securities with the Controller of Currency. These deposits, following a principle in the English Act, are to be protected from attachment. The Government will have the power to apply to the Court to wind up a company which appears insolvent, but there is a proviso that in cases where an unsound company might revive by actuarial advice such company shall be permitted to submit its books for actuarial examination.

NIZAM'S POSTAL DEPARTMENT.

A recent Note on the working of the Postal Department of H. E. H. the Nizam's Government for the three years ending June 5, 1925, compiled by Nawab Sirdar Nawaz Jung, the Postmaster-General, draws attention to various reforms introduced during the period of his administration, the most notable of these being the creation of a State Savings Bank and the development of the V. P. system for parcels. The advantage of cheap postage is forcibly illustrated by the statement that without any increase in the rate, as was done in British India in 1922, the receipts in 1923 showed an abnormal increase of Rs. 77,000. The deficit in the working of the department has been reduced during the course of two years from Rs. 2,68,000 to under Rs. 75,000. If the present increase in income continues it is expected that at the end of the official year ending October 5th, 1925, the receipts will balance the expenditure.

POPULARITY OF LIGHT CARS.

Great Britain has been caught by the whirlwind of the light car, and motoring for the million is now in sight. It is a triumph of British enterprise which so far has been unparallelled in any country in the world. The running cost of a two-seater with a "dicky" seat and capable of carrying four passengers is extraordinarily low. It is under £4 a month. Insurance costs £12 and registration another £12. Therefore the total cost is well under £4 10s. a month. This covers a mileage of between eight hundred and a thousand miles a month. That is to say, a husband and wife with two children can journey every week-end to the seaside or to the heart of the countryside for a cost of a little over a pound a week

It is not surprising, therefore, that the light car industry is in a prosperous condition. There are now over 400,000 light cars on the road in Britain. Last year the total output was about 132,000. This year it will probably be 155,000. At least 100,000 workers are directly employed on the manufacture of light cars. Many additional workers are engaged on accessories and tyres. It is certain that as other countries follow the lead of Great Britain the export of light cars will increase at an even more rapid rate. The price of a light car ranges from £140 to £250. The system of purchase by instalments has made it possible for families with a moderate income to avail themselves of the joys and delights of motoring. When will India get cheaper cars we wonder? There have been rumours for some time past of cars costing about Rs. 700 each being available in India shortly, but alas! we look in vain for confirmation.

Agriculture in Bombay.

The Director of Agriculture has submitted his report on the result of the experimental operations undertaken in co-operation with the officers of the Revenue Department, for the prevention of smut in *jowar* by treatment of the seed with copper sulphate, during the year 1924-25. A large amount of propaganda has been done in this connection, including the display of large illustrated posters in the vernacular. The areas affected by the propaganda do not include Sind and the Konkan. It is in the rest of the Bombay Presidency that *jowar* is largely grown and suffers severely from smut. The Agricultural Department provided a stock of 144,000 packets of copper sulphate, each of which was capable of treating four acres. Out of these, 85,994 packets were actually distributed, being equal to treatment of 343,976 acres as against 250,348 acres in the previous year. This is a substantial increase on the previous year particularly in the Southern Division and in Gujarat, says the Director, but there was a considerable falling off in Khandesh and Nasik Division. In addition to this, the co-operative movement have been interesting themselves in the spreading of this system of treating *jowar* seed, and have distributed a considerable number of packets. When it is considered that the area of *jowar* in the Presidency, exclusive of Sind, is over 74 lakhs of acres, it shows how even yet the propaganda has only touched the fringe of the area.

Facts about Madras Forests.

The following, taken from a speech made by the Chief Conservator of Forests in Madras, will be read with interest:—We have in this Presidency apart from sandalwood and red sanders forests at least two thousand square miles or say 12½ lakhs of acres of real timber forests which contain vast quantities of valuable trees. From this huge area we extracted during 1923-24 just about 12½ lakhs of cubic feet of timber or one cubic foot per acre. Now in some European forests the mean annual increment, *i.e.*, the quantity of timber which grows every year on an acre is as much as 90 cubic feet. Conditions here are much more favourable for rapid growth and we can safely assume that on every one of these 12½ lakhs of acres 25 cubic feet of timber grow every year. It is obvious that if you have 25 cubic feet growing and only remove one cubic foot you are waiting 24 cubic feet. These 24 cubic feet merely fall down and are eaten by white ants and a simple calculation will show you that the waste every year on 12½ lakhs of acres is 600,000 tons. Now what would be the result if we had the organization to put the annual yield of the forests to a profitable use? I said just now that instead of extracting 25 cubic feet from every acre of the 12½ lakhs of acres of our timber forests we only extract one cubic foot. On this we get a profit of something in the neighbourhood of eight annas but the total amount realized is so small compared with the establishment which we have to maintain to manage and protect the forests that the profit is entirely eaten up and our 12½ lakhs of acres of timber forest bring into the coffers of the State practically nothing at all. You have been privileged to see the logging operations at Chenat Nair so admirably conducted and organized by Major Chipp under the able guidance of our Chief Forest Engineer. These operations are entirely new to India. It is only a matter of extending their scope to make all the timber which now goes to waste available to the consumer. If we do this and can make use of the 25 cubic feet which grow on every acre, while we could not expect a profit of eight annas per cubic foot as much of the timber would be low grade stuff it is perfectly reasonable to look for a profit of two annas after paying for establishment. This would mean Rs. 3 per acre or on 12½ lakhs of acres nearly 40 lakhs where now we get nothing at all.

Any industry which is kept up by artificial methods will only ask for more and more help, and will finally die of a slow disease.—*Mr. Mackinder, M.P.*

Miscellaneous Notes.

Printers of the Future.

The progress of British printing was demonstrated by the remarkable exhibition recently held at the London School of Printing, Stamford Street, Blackfriars. Every class of work was exhibited, from handbills and cheaply-printed periodicals to the finest artistic productions. One specimen of the latter was so perfect that when placed side by side with the water-colour original in the same frame it was impossible to detect which was which. The exhibits showed marked improvements both in design and workmanship over those displayed on previous occasions. Generally speaking, the specimens were superior to those at the Exhibition of Continental Printing recently held at the school. Lord Riddell, the president, who opened the exhibition, said that an important duty was being performed by the school in training printers of the future. There were 2,300 students. The school was a variant of the eternal triangle. It was managed and financed by the London County Council and the masters and the men, all combining to improve printing. Trade unions now recognized that in the interests of the men as well as of the masters and the nation it was necessary that proper training should be provided. The true way to industrial peace lay in joint responsibility and joint effort. The apprenticeship system had fallen into disuse, and was being replaced by such instruction as was given by the school. It was a gross slander to say that British manufacturers and workmen had lost their skill. At the present time the printing trade was producing better work than it had ever done before. The Rt. Hon. C. W. Bowerman, M.P., agreed that the school had been a complete success. After an experience of fifty years he unhesitatingly claimed that to-day the trade was in a more healthy condition than at any previous period. Mr. W. J. Pincombe, of the L.C.C., and Mr. W. B. Wykes, President of the Federation of Master Printers, both bore testimony to the excellence of the exhibition and the valuable work of the school.

Tata Iron and Steel Company.

The Director's report of the Tata Iron and Steel Company for 1924-25 states the year has been the worst experienced by the industry since the war. The tonnage of pig iron produced during the year was 552,000 tons as compared with 442,000 tons in 1923-24 ; of steel ingots 370,000 tons against 235,000 tons last year ; and of finished steel 248,000 tons against 163,000 tons. The Company's nett profits for the year amounted to nearly Rs. 64¼ lakhs which with the sum of Rs. 385,000 brought forward from last year's account, the total profits amounted to over Rs. 68½ lakhs. Deducting depreciation of Rs. 61 lakhs on capital expenditure, leaves a balance of nearly 7 lakhs fifty seven thousand out of which the Directors recommend a payment of arrears of dividend only on the first preference shares for the year ending the 31st of March, 1924. This will absorb about four and a half lakhs leaving a balance of over three lakhs to be carried forward.

The Company look forward to the future with optimism. Orders are booked well ahead, the price of coal has fallen. The policy of protection would protect the Company from further lowering of imported iron prices. Rupees 21 lakhs on account of special bounty is receivable from Government and Government have further promised an enquiry into the position before the Assembly meets in September.

A Universal Language.

A new universal language, Ido, which he terms "the most perfect language in existence", is being advocated by the Rev. F. L. Odenbach, seismograph observer of John Corroll University. Speaking recently of Ido, Father Odenbach said : Telephone and radio have brought the peoples of this earth within speaking distance but the scenes enacted are suggestive of what must have happened at the Tower of Babel. The remedy, however, is in Ido, a language which may be learned at home in a few months. The salient features of this new and perfect vehicle of thought follow :—

"The alphabet is the English one, with a single sound for each letter ; the spelling is absolutely phonetic ; every word has but one invariable meaning.

"The accent is governed by a single rule. The infinitive form has the accent on the last syllable ; all other words of more than one syllable on the last but one.

"There are but 20 grammatical endings to be learned by heart. All nouns end in "O", all adjectives in "A" and all adverbs in "E" and the rest are used for the conjugation of the verb.

"A dictionary of 10,000 roots, with about 75 suffixes, forms the material of this auxiliary language. The Ido dictionary thus puts at our disposal some 30,000 words, twice as many as Shakespeare used.

"Since the roots were all chosen from the living cultured languages, Americans and the English will recognize 79 per cent of the words at first sight; the Germans 61 per cent, the French 91 per cent and Spaniards 79 per cent. There are no exceptions in its grammar."

Gwalior Investments.

The death in Paris of H. H. the Maharaja of Gwalior deprives Bombay of a remarkable patron of industrial enterprise. His investments in Bombay amount at least to three crores of rupees and many concerns relied upon him for gallant support. Sir Shapurji Bharucha was responsible for his shrewd investments. Sir Shapurji was his first financial agent and as the Napoleon of Bombay finance he directed the Gwalior crores to profitable channels. Sir Shapurji's place was taken by Mr. F. E. Dinshaw, the great lawyer-financier of the western presidency. His Highness would select a man and trust him without any meddlesome interference. The policy was successful except in the Boulton ramp. At the time the Boultons interested themselves in the Alliance Bank, they undertook to open branches at Gwalior and Ujjain against a standing deposit of Rs. 40 lakhs from Maharaja Scindia. In the boom transition, the Gwalior State Trust came into being with a capital of one crore. All sorts of industries, leather and paper and pottery, were launched under its auspices, but events proved them abortive because of the collapse of the Alliance Bank of Simla. Unlike another well-known Maharaja who interested himself in speculative developments, H. H. Maharaja Scindia lent his money-power to stable debenture-investments. When the boom was on, a well-known insurance company allotted ten thousand ordinary shares to him. The shares were at a premium and could have been resold at a profit, but His Highness returned them saying that he did not involve himself in the issue of ordinary shares. He saved the Tata Iron and Steel Industry at a critical turn. He was a great example to other ruling princes, and his premature death is an event of deep regret in Bombay.

£90,000,000 for Radio.

United States radio manufacturers estimate the current year's expenditure by the public on wireless sets at £90,000,000. The industry has made phenomenal progress since its inauguration in 1920. In that year the official trade returns show that only £400,000 was expended on wireless receiving sets and components. The great "boom" began in 1921 and the demand for sets and parts soon became greater than the supply. Manufacturing companies sprang up in all the great cities, and last year the value of the trade was returned at £69 lakhs, nearly £9,500,000 having been expended by farmers in the rural districts alone. The trade has undergone a remarkable development in another respect. The sales in 1920 were confined almost entirely to components for home-assembly. By 1923 ready-built sets accounted for nearly 20 per cent of the whole trade, and last year this proportion rose to 40 per cent. This year manufacturers are basing their output on an increase in the demand for complete sets to about 60 per cent of the total trade.

Tanganyika's Mineral Wealth.

That Tanganyika Territory is yearly becoming more valuable as a British possession is clear from the official record of the mineral output of the country during 1924. The gold production was valued at £31,185, to which the river diggings in the Rungwe district contributed £5,854 in the first half of the year and £21,393 in the second half. The Sekenke Gold Mine, which resumed operations some months ago, produced 743 oz. of gold, valued at £2,972, during the latter part of the year, while the Mwanza district is represented by an output of £966. The mica production for the year was valued at £27,639, representing slightly more than 56 tons exported. Salt production was returned at £20,406, and cassiterite (tin concentrates) appear for the first time with an approximate export value of £3,000. The most noticeable feature of the statistics is the rapid progress made in the latter six months of the period under review.

The Baldwins.

Mrs. Baldwin, mother of Mr. Baldwin, the Prime Minister, whose death was announced recently, was one of a talented group of sisters of the name of MacDonald, daughters of a Wesleyan Minister. One of the sisters became the late Lady Burne-Jones, wife of the celebrated painter; another was the mother of Rudyard Kipling; a third became Lady Poynter, wife of the former President of the Royal Academy; and the fourth the mother of the Prime Minister of Great Britain. The most notable fact about the sisters is that they

were all women of considerable talent, and bore a passion for politics, art and literature, in addition to possessing a remarkable type of beauty. It was his late mother's influence that led Mr. Baldwin to develop that love of literature which has proved of immense value to him in his brilliant career. Her death removes a charming personality from the society life of Britain, at the venerable age of eighty.

Mr. Lloyd George.

Mr. J. A. Spender sizes up Mr. Lloyd George in the following passage in his book *The Public Life* :—So he exhausted both parties and left them for the time being nervous wrecks. His qualities had their uses in war, and history may judge that the sacrifices he required of his fellow-beings were justified in the total result. But normal Englishmen simply could not keep pace with him or follow the turns of a mind which darted from pole to pole of the political compass, which was willing to make all incompatible experiments on the chance that one would succeed ; which seemed to treat all men, all circumstances and all events as raw material for his shaking hand. But never while it lasted was there such virtuosity in English statesmanship. He dazzled by his inventiveness, his seeming recklessness of consequences, his lavish distribution of favours, his ruthlessness in discarding unsuitable tools, his insatiable zest in the playing of political games, and his hypnotic influence over his pawns. His enemies said that he never read or studied, but his mind was unceasingly at work, and it grasped in ten minutes what other men took ten hours to ferret out from books and papers.

World's Gold Output.

The *Toronto Globe* publishes an article showing how the British Empire has supplanted the United States as the premier gold producer of the world. In 1880 the United States produced 34 per cent of the world's output, while the British Empire only produced 29 per cent. To-day the positions are reversed, the Empire producing 70 per cent and America only 14 per cent, the remaining 16 per cent being scattered among a dozen countries. Canada is rapidly becoming a heavy gold producer and shows signs of supplanting the United States. Canadian production has increased from $1,000,000 in 1891 to $31,500,000 in 1924. Recent finds in Ontario have offset the loss through the exhaustion of the Klondike fields.

Death of Dr. Baedeker.

Dr. Fritz Baedeker, the head of the Leipzig firm of publishers which publish the famous guide-books, has died at the age of eighty-one. His father's publishing business was moved from the Rhineland to Leipzig, the centre of the German book trade, in 1872, and six years later he became head of the firm, and concentrated his attention on the development of the guide-book department. He sent agents all over the world to collect the information required for the compilation of the books, and obtained the help of experts on antiques and art, as well as noted Orientalists and Egyptologists. The pains taken to ensure accuracy made the reputation of the books, and translation into French from German secured the rights of the firm beyond Germany.

Brown Coal and Lignite Development.

Dr. G. S. Haslam writes in the "*Times*" *Trade Supplement*.—A matter of the utmost importance to a large part of the Empire is the development of the brown coal and lignite resources. Australia, for instance, possesses the world's largest deposits of lignite and brown coal, which occur generally in seams several hundred feet in thickness. Germany has been compelled by events to pay the closest attention to her brown coal, and nowhere has more intensive research been carried out as there. The problem of distilling brown coal is widely different from that of distilling a typical English coal. The raw material is generally of a friable, sometimes even powdery or earthy, nature, carrying 30 to 60 per cent of water. The oils distilled from it have a high melting point, and at ordinary temperatures have the consistency of grease. Oil from a typical bituminous coal, on the other hand, flows readily at normal temperatures.

Lord Milner.

Lord Milner, who died recently of that fell disease, which no one understands, 'sleepy sickness', was, however one may have differed from his policy, a man of the greatest distinction, with all the devotion and thoroughness of the German civil servant. He did not understand democratic institutions, but he sought to serve his country to the utmost of his powers, and history will decide how far he succeeded. His 'kindergarten' included such men as Mr. Philip Kerr, Mr. Lionel Curtis, Mr. W. L. Hichens, and the present editor of the *Times*.

Books in Brief.

Short Reviews of Recent Books.

The Early History of India.

By Vincent A. Smith. Fourth Edition. Revised by S. M. Edwards, C.S.I., C.V.O., I.C.S. Retired. University Press, London, Madras and Bombay.

As most students know, Sir Vincent Smith's *Early History of India* is a work not only of distinction but also of merit. That it has gone through four editions shows its utility. A work of the kind was long a desideratum and when it was first issued it happened to fill a void. It is both comprehensive and as far as a single Editor can make it also fairly up-to-date. In reviewing a work of this nature, carping criticism seems to us not only out of place, but also ungenerous to a degree. The book, however, is used as a standard text-book and it is, therefore, a necessity to point to some directions in which it might, with advantage, be improved. We say "improved" because we feel its excellence so much that we would fain see its contents as unobjectionable as may be possible to add to its usefulness. The late Sir Vincent would not, we think, have desired anything better than that. We would suggest for the consideration of the future Editor of this work the following observations :—

(*a*) Quotations in Greek and Latin should be followed by translations. These languages are not understood in India and as the book is intended mainly for Indian students and scholars, this is a necessity. (*b*) The references to the *Arthasastra* should hereafter be made to the collected 2nd Edition now published by Mr. Shama Sastri and not to the original "instalments" in English published in the *Indian Antiquary* and other fugitive publications. (*c*) The account of Alexander's campaign as given should be carefully checked with reference to Mr. Jayaswal's recently published *Hindu Polity*, as this seems, in our opinion, a good corrective to it. Mr. Jayaswal's writings certainly throw new light on the subject. (*d*) The word "Indian" can well be substituted for "Native" throughout the work. This will add to its dignity as a learned work and make it more welcome generally to readers in India. (*e*) Unnecessary and irritating references to "Oriental Governments", "Oriental Monarchs" (see pp. 310, 315, 296, 288, 290, 200, etc.), may with advantage be avoided. "Oriental" and "Occidental" are political and not historical terms. They betray bias and detract from the value that might otherwise be attached to any judgment pronounced. (*f*) The qualifying of Arrian's statement about the honesty of Indians seems uncalled for in the light of the authority quoted and takes away much from the value of the opinion conceded by the author. (*g*) The author's study of Indian "tribal organizations" as disclosed in this work (see p. 145, etc.) seems erroneous. A good corrective to this is afforded by Mr. Jayaswal's work above-named. (*h*) Sir Vincent Smith's attempted identification at p. 194 (*f. n.*) of "Satyamangalam" seems wide of the mark. (*i*) In some parts of the work, we have noticed references to kings in the body of the book, which are first found mentioned only in footnotes. The inconvenience attaching to this mode of writing the text should be obvious. This deserves to be rectified. (*j*) A few printer's mistakes may be noted for correction :—On p. 228 "Parana" must be "Purana"; and on p. 230 "J. Br. Br. R. A. S." should, we think, be "J. Bom. Br. R. A. S." We hope and trust our suggestions herein will not be misunderstood by the present Editor, Mr. S. M. Edwards, who has, in our opinion, done his difficult work, admirably. We have no doubt that this Edition of the work will command the attention it so richly deserves both from the general reader and the critical scholar and student.

Evolution of Indian Polity.

By Mr. R. Shama Sastri, B.A., Ph.D., M.R.A.S. Published by the Calcutta University Senate House, Calcutta.

Dr. Shama Sastri presents in this work a view of the evolution that is in many respects an unique one. The basis of his theory is to be found in a historical study of religious texts of the ancient Hindus. He summarizes the arguments as set out below :—

"The first stage in the evolution, as detailed in the first lecture, is found universal and as such it requires no additional proof. The Institution of Elective Monarchy of Bachelor Kings begotten by priests on a family of queens or cows as they are called, is peculiar to India; and no other nation has as yet been found to have passed through the institution of bachelor kings to hereditary monarchy which forms the third stage in the evolution of Indian polity. In all these stages, the monarchical element seems to have been under the powers of the People's Assembly composed of priests, nobles (Rajas), traders and agriculturists (Vis). As stated in the Mimansa Sutras of Jaimini, the king had no power over land, and was entitled only to $\frac{1}{6}$th of the produce. Banishment or degradation of kings was one of the constitutional checks frequently employed for the prevention of the kings' extravagant proceedings and gambling and other vices. The same constitutional check seems to have been employed even in the few Buddhist republics that prevailed side by side with monarchical institutions. What strikingly distinguishes India from the other contemporary nations in the application of such constitutional checks as banishment or degradation of tyrannical kings is its calm and peaceful procedure as contrasted with the bloody revolutions accompanied with horrible destruction of person and property in other nations. It is Atmamedha, also called prayopavesa or the vow of abstinence to death on the part of the people *en masse* till the removal of the cause of their grievances.

"The fourth stage in the evolution seems to have been the Damma-Chakka or Empire of Righteousness of the Jainas and the Buddhists. The rise of Jainism and Buddhism in India is not merely a religious revolt against the Brahmanic animal sacrifices but an indirect and persuasive appeal to Vedic kings to abstain from their bloody warfare and animal sacrifices. Unlike the French Revolution and the American War of Independence for man's rights of equality, fraternity and liberty, the directly religious and indirectly political propaganda of the Jainas and the Buddhists proclaiming equality and fraternity of men and charity to man and beast alike on the socio-political side, and control of passions and renunciation of the world

for Nirvana or final emancipation on the spiritual side has with no destruction of property and person converted India into a peaceful Damma-Chakka or Empire of Righteousness and moral law on the ruins of old Brahmanic Institutions, swept off the land together with their direct privileges and prerogatives. This Damma-Chakka is followed in its turn by the revival of old Dravidian monarchical institutions under the control of Brahman priests and ministers and privileged castes, as desired by the politicians of the Kautilya period. The Andhras in Central India and the Pandyas, Cholas and Keralas in the South stood in as much need of the support of the Brahmans for their revival as the latter in need of the support of the Dravidians for the revival of their Vedic culture and institution. In the Vedic and Brahmanic literature the Aryan monarch figured as a Kshatra or soldier paid for with bali or tax in the form of agricultural produce for protection of person and property of the people against enemies. In the Buddhistic literature he was Gana-dasa or servant of the Buddhist Sangha fed by ⅛th of the agricultural produce of the people. For his guilt, if any, he was liable to banishment, degradation or even the gallows. A monarch of such limited power could never be thought of as a reliable support of Brahmanic culture just reviving or almost revived. The old Dravidians who had hitherto been regarded as Vrishalas or persons of Sudra birth could scarcely afford shelter to Brahmanic culture. It was, therefore, necessary to devise a new theory of monarchy and invest the Dravidian kings with the right of Sarvabhaumatva or power over all the land and people, as opposed to the old theory of the Mimansakas that the king has no right of ownership over land or people. A new theory of theocratic monarchy making the king's person divine and investing him with power over land and people in virtue of his building temples and setting up of idols of gods in the temples with rich endowments has been accordingly devised by the Bhatta school of the later Mimansakas (8th century onwards) and is thus stated in the first Didhiti of the Rajadharmakaustabha by Ananthadeva, son of Khandadeva, the author of Bhattadipika on the Mimansa sutras :—

" 'In the Sribhagavata the king is said to acquire his right of ownership of land of all kinds (Sarvaprakara bhumisvamya) only in virtue of his having set up idols of gods. 'He acquires ownership of all the land in virtue of his setting idols of gods, of the three worlds in virtue of his erecting a temple ; of the abode of Brahma in virtue of his making endowments for the worship of gods ; and he will attain equality with me (God Krishna) in virtue of his performances of the above three' ? Likewise in the Vishnudharmottara :—'Kings desirous of attaining to heaven should in the Kali age set up new cities after erecting temples.' Here the word cities implies villages and fortified towns also. The verse quoted from the Bhagavata lays down that a king who is desirous of acquiring ownership of the cities, villages, towns and the like, which he establishes, should at first erect temples. Whoever is desirous of acquiring such ownership in virtue of his being anointed as a king shall also erect palace and other buildings at first. Hence it is that in enumerating the duties of a king, the erection of temples, palaces and the like are enumerated first. In the verse of the Bhagavata the king is said to acquire his ownership of all the land in virtue of his setting up idols of gods and temples. In this connection there crop up two alternatives : whether the word 'mahipala,' 'king' in the verse means a person who is already exercising his royal duties as stated in the *prima facie* view in the Jaimini's Mimansa Sutra or any other person of the ruling caste, as stated in the conclusion of the commentary on the same sutra ? It cannot be the first meaning, for in that case there can be no necessity for the anointment of such a person. Nor is the erection of temple, etc., the duty of a person who is already exercising his royal duties, for his exercise of his royal duties is dependent on his acquisition of that power in virtue of his erection of temples or the like. Nor can it be the second, *i.e.*, any person of the ruling caste, for in that case the construction of palaces and temples, etc., which can be undertaken by all, irrespective of caste and creed, would become a special duty of the Kshatriya caste. Not so ; for though the erection of palaces and temples in general be undertaken by all, still, the construction of temples and palaces prior to the work of laying out cities, and villages can be regarded as a special duty of a person of Kshatriya caste in view of acquiring the right of sovereignty. In fact only such a person as is possessed of bravery, martial courage and other manly qualities befitting him to be a capable protector of people is taken as worthy of being anointed as a king. Hence like qualities such as bravery, courage, and capacity to protect, the construction of temples and other building befits a person to be a sovereign of the people.' -

"There is no doubt that this new theory of theocratic monarchy was universally accepted in India in mediæval period. The existence of a great number of temples in the ruined capitals of ancient kings in India, especially in the Dekhan, proves it beyond doubt. It has been usual with historians to regard this form of monarchy as despotic. But I doubt whether the temple-builders of the mediæval period were so despotic as they were believed to have been. As a matter of fact effective religious restraint and priestly domination seem to have been the characteristic features of Indian monarchies in general, and of mediæval states in special. With this last step ends the evolution of Indian polity, having its growth arrested by Muhammadan conquest of India in the North, while in the South a number of Hindu kings vied with each other in establishing their sovereign rights by studding the land with temples. It is true that we regret to miss such sweet and bewitching words as Equality, Fraternity, Liberty, Self-determination and the like in the political history of India. Yet I am inclined to believe that such religious and moral restraints as Self-denial, Conquest of the Six Passions, Preparation for Moksha or Nirvana by renunciation frequently preached to the prince and the poor alike were scarcely less powerful than the constitutional and legal checks of Western nations of modern times. How far the modern constitutional checks based more on utilitarian than ethical principles are preferable to religious or philosophical restraints which are applicable to all is a question yet to be decided."

It will be readily admitted that the theory as outlined deserves to be considered by other scholars, especially as its distinctive features are many and novel. The subject is of great interest and as constitution-making is now largely in the air, publications of this kind ought to prove highly useful. With Mr. Jayaswal's "Hindu Polity" this work will open up a field for further research, which will, we have no doubt, receive increasing attention in the years to come in this country.

The Life and Letters of Sir Henry Jones.

By L. J. W. Hetherington. Hodder and Stoughton, London.

It tells the story of a man who without any advantages of early education or birth made for himself a definite position as a philosopher and an educationist. As a biographical subject, a philosopher presents certain special difficulties to the writer not to speak of the reviewer. The author must avoid on the one hand being too abtruse for the ordinary reader and on the other the artificiality which tends to result when an adequate discussion of the central life work of the subject of the biography is omitted. Mr. Hetherington has sailed successfully between Scylla and Charybdis and performed his difficult task with distinction producing a very interesting and often inspiring book.

Sir Henry Jones was a man of the people. He was born in Wales and his father was a cobbler. Jones himself was bred up to his father's art, in which he took an artist's pride and at the outset of his career he had no other idea than to follow this calling. The atmosphere of his house was strongly religious and his early years were familiar with song and oratory, the two great native arts with which religion is adorned in Wales. It was almost by accident that his energies were turned in the direction of study. But once he had decided that his life's work was to be a student and a teacher he never turned back. By hard and incessant work he obtained a scholarship at the Bangor Normal College and from thence proceeded with a scholarship to Glasgow where he graduated in 1880. In the following year he was appointed as a lecturer in philosophy at the University College of Aberystwyth in North Wales and began his career as a writer and lecturer which passed smoothly from one success to another till the last few years of his life which were shadowed, though not embittered, by suffering. He died in 1922 at the age of 70.

It is impossible to do justice to a system of philosophy in the few paragraphs which can be devoted to a review. It is only possible to give a general indication of the trend of our subject's thought. In his early life Jones was a keen student of Carlyle and Browning. Both these writers insist on the importance of morality in the scheme of things. But Carlyle's morality is of the Old Testament, imposed on man by God, while Browning's may be said to emanate from his own conviction that 'God is love'. Jones' earliest book is entitled 'Browning as a Philosophical and Religious Teacher' (1891) wherein he closely analyses Browning's position and agrees with him in holding that "God himself is a partaker in moral struggle and for man morality is not an external commandment but the intelligible law of his life". Browning's philosophy is profoundly optimistic. But he was, of course, confronted with the difficulty of maintaining such a faith in the face of the manifold evidences of human life, in the face of the existence of evil. He found no solution tolerable to man's intelligence and took refuge in an attitude of irrationality.

"Wholly distrust thy knowledge then, and trust,
As wholly love allied to ignorance;
There lies thy truth and safety."

This was a position that Jones could not accept. If he was to accept Love as the truth of things, the hypothesis of this Love must be grounded on reason and be capable through and through of rational defence.

What was Jones' conclusion on the age-old problem of personal immortality? He believed that there was only one hypothesis which explains the status of the part in whole and which promises a reconciliation of apparent evil and final good. To use the language of religion, that hypothesis is 'God is Love'. Men are free to choose the right or the wrong. Without evil there can be no moral progress. The possibility of moral life requires as one of its conditions the reality of evil. Evil stands in finite expression not as a limit of God but as a condition of the achievement of his highest powers. But in many lives the seeming good is never attained and man remains unrepentant to the call of the better, in others the victory of the good is incomplete. Jones held, therefore, that the implication of the Idealist theory is a doctrine of personal immortality, and that without it the theory cannot stand.

Jones' political theory is summed up in his 'Principles of Citizenship', a text-book written for the use of the Army classes during the War. He took the position, as opposed to the negative view of the functions of the State, that the duties of the State did not end with the provision of internal and external protection. He considered that the State's action should be limited not by expediency but by principle. But these principles should be the result of the conscience and consent of the community. He opposed the emphasizing of class consciousness whether on the part of consumers as opposed to producers or by labour as opposed to capital. Of State control he said, "Though ultimately a concern of the State and subject always to its direction, this control may be exercised by the industrial organization itself. To throw the responsibility on industry....may be the most potent means of its moralization."

Sir Henry Jones took a prominent part in educational movements in Wales. The Commission of 1880 had recommended the establishment of a system of intermediate or secondary schools in that country. But the Welsh representatives in Parliament feared to press the matter lest the proposed half penny education rate should prove unpopular with their constituents. Jones, however, converted Mr. William Rathbone, M.P., a leader in matters educational, and a campaign was organized and carried through with such success that an effective demand was created throughout the country and the Act was passed in 1889. The Welsh had then to decide whether to insist on a high standard of equipment and thereby restrict the number of schools or to build a larger number of smaller schools so as to render these educational advantages easier of access. Jones threw all his weight on the side of the latter view which actually prevailed. Throughout the campaign he gave active assistance by lectures and writings both in English and Welsh.

Of Jones' delightful humour Mr. Hetherington has given us several instances which are scattered through the book. It is not fair to forestall the reader's enjoyment of these. I will restrict myself to quoting Sir Henry's pungent comment on the system of calling on new-comers. "Resolved if possible to return no call, *i.e.*, to go into no man's house except on business. Why should they try to make new-comers "feel at home by pouring in on them? That is not the way in which friends are made." Yet Jones himself made many true and valued friends.

The story of his heroic struggle with the painful illness to which he finally succumbed is touching and ennobling. In every way this man was an example worthy for us to follow.

The Bombay Forests.

By W. E. Copleston, C.S.I., Chief Conservator of Forests, Bombay.

In order that the people of the Presidency may understand the aims and purposes of the Bombay Forest Department, a small book has just been published under Government auspices by Mr. W. E. Copleston, C.S.I., Chief Conservator of Forests, Bombay Presidency. The book is not technical in any way; it is not intended as a text-book for forest officers. It is intended for those members of the general public who desire to know something of one of the Presidency's most valuable natural assets, the system which operates it, and the conditions that govern relations between the Forest Department and the cultivator. Mr. Copleston draws attention to the importance to the public of the Presidency's forests. He shows that the imports of timber through Bombay and Karachi are considerable, amounting in value to over a crore of rupees a year, while exports are negligible. Timber is imported from Europe, America, Australia, etc., and the demand in the Presidency is far in excess of the local supply. Gujarat and Kathiawar absorb all the timber that can be produced in the forests north of Bombay, while Bombay itself depends almost entirely on foreign imports. Much of the timber supplied to the Poona and Deccan markets is imported, but the supply from Kanara and the neighbouring forests is more than sufficient to meet demands south of Poona, in Bijapur District and eastwards through Hubli to the Nizam's territory. Steady development of the Forests and careful exploitation will in time, it is hoped, lead to a reduction in the imports of timber although railway charges are very heavy. Timber can be transported by sea from Saigon and Rangoon far cheaper than by rail from the Kanara forests to Bombay. Railway sleepers even from Australian ports are often brought over at rates which are a fraction of the cost of railing from Kanara to Bombay.

After sketching the history of forest conservancy in Bombay, the writer emphasizes the necessity for the continuity of a fixed forest policy for "Timber is a crop and not a mine", and a forest crop sown to-day may not be ripe for felling till sixty or hundred years hence. More than half of the 12,000 square miles of the Reserved Forests in the Presidency cannot be classed as commercial, and only some 5,640 square miles, less than 5 per cent of the total area of the Presidency, remain for supply of timber for the market. The various types of forests in the Presidency are described and the beneficial effects of forests on temperature and water supply explained. Rarely can an area once rendered a barren waste by denudation of its forests be made to recover its fertility. "Who could foretell," says Mr. Copleston, "that the destruction of trees from Morocco eastwards to the Himalayas including many parts of Asia Minor would result in fertile lands being converted into sandy deserts for all time?"

Dealing with the preservation of forests and the absolute necessity of control, Mr. Copleston quotes the case of the United States, where the rich virgin forests—in extent about hundred times the total area of this Presidency—have been reduced to one-sixth of their original area, the rate of cutting over forests being as much as 10 million acres annually. The result has been that many paper pulp industries have now to import wood from Canada. The average cost of wood has quadrupled in 20 years, the huge sum of 84 crores is spent annually on the transport of timber alone, and many States are confronted with the problem of providing for their future requirements. Since 1921 over 2½ crores of rupees have been spent by the State of Pennsylvania alone on reafforesting operations, and a bill is before the State Council proposing a loan of 8½ crores of rupees to carry on the work. The reckless felling of timber has proved a calamity to the country, and industries in certain areas which formerly depended upon forest products have disappeared.

Mr. Copleston deplores the lack of interest in forest matters shown by the people generally. The forests are generally situated where the people are uneducated, and what is more unfortunate, very few educated Indians get an opportunity to see anything of forestry, the majority passing most of their lives in towns and in the larger villages such as are seldom found near good forests. Nor does the educated young man take any pleasure in nature-study. It is from such keen students that the genuine forester should be recruited, and there are far too many instances of men who have entered the Forest Department through necessity attracted entirely by the salaries, whose whole being revolts against the life and whose desire is to serve not in the finest forest areas but in the worst. He contrasts the apathy here with the public interest in a country like Canada where Forestry Associations are growing rapidly.

In the Bombay Presidency every effort is made to ensure that conservation of the forests and production of timber is conducted in such a manner that the people in the vicinity may enjoy as many privileges as possible and considerations of revenue and sound forestry frequently take a subordinate position to the wants of the local villagers. The claims of agriculture and the requirements of the cultivators always receive careful consideration, and in some localities field crops are directly dependent upon forest products. Perhaps the most important privilege is that of grazing. Sometimes this is free. At the most it is four annas per head of cattle a year. In many localities grazing is worth over Rs. 10 per head, and even on the rather bare hills in Poona private owners recently valued their annual produce of grass at Rs. 50 an acre. In Bengal the Beharias pay Re. 1 per head of cattle and in Madras ryots pay as much as Rs. 4 per head of cattle. The revenue from this source in this Presidency is just under 4 lakhs. To bring a forest area into good tilth a long period of closure to cattle is essential. Not only do cattle render the soil infertile by keeping down vegetation but they also break up the surface loosening the earth so that much fine soil is carried down to the rivers during heavy rains. Not only do the forests suffer by damage from cattle but also by damage from man. The book contains a number of photographs giving illustrations of this and instances one area where mischievous damage to sandalwood reduced the annual revenue expected from 3 lakhs of rupees to 10,000 rupees—a dead loss of a large sum of money to the revenues of the Presidency. In this connection Mr. Copleston again emphasizes the point that forest produce is a crop and that young teak seedlings require protection just as any agricultural crop does. If cattle get in before the growth of teak is sufficiently developed the resulting crop will be worthless and full of forest weeds. Forest cultivation is in many respects very similar to field crop cultivation except that it takes many years to reach maturity.

One chapter in the book shows how the Forest Department has opened up areas hitherto inaccessible such as the Dangs, where the Forest Department has constructed over 200 miles of roads and a number of bridges, etc. Other sections of the book deal with fire protection, sowing and planting, transport, saw-mills, the protection of agricultural crops against damage by wild animals, and an interesting chapter is devoted to explaining how the timber is extracted and brought to market. Mr. Copleston concludes by saying:—"If people took an interest in the protection of the forests the quantity of timber produced would soon be double what it is at present and with this increased yield the sum spent annually in the forests would rise to a crore of rupees a year and imports of foreign timber would decrease. All people who have the good of their country at heart should encourage the protection of the forests, one of nature's greatest gifts to the country."

The book is excellently printed, is illustrated with many photographs, and can be obtained from the Book Depot at Poona or from any of the leading book-sellers at the very low price of One Rupee.

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The New Military Policy of the United States.

By Virgil Jordan.

Those liberal groups in European countries who are concerned for the improvement of international relations and are working for the development of new machinery of international organization may well concentrate their attention upon the rapid changes that are taking place in the war machinery of the United States. It is my personal opinion that these tendencies may make more difficult the realization of some of the projects and ideals for which peace workers abroad as well as in the United States are striving. This is not said with the purpose of scaring anybody or of sounding portentous alarms. But the peace movement in all countries has always tended to be a bit over-sanguine, and to ignore certain realities which underlie the problem with which it struggles.

In its preoccupation with the control or mitigation of the superficial institutions and machinery of war it has not frankly or realistically faced the problem of the real nature of modern war and has largely ignored the rapid changes in form which it has undergone in the past decade. These changes are perhaps more marked in the United States than in other countries since the war, so that peace workers who wish to study their problem in its newer phases may find ample material in the United States to-day.

It is fairly clearly recognized now that the imperialistic tendency in American foreign policy had its beginning in the Spanish-American War of 1898. That war marked the first clear interference of the United States in foreign territory, the first acquisitions of new territory clearly outside of its natural sphere. But, more important, it carried with it the inevitable implications of imperialism in domestic affairs—an altered military policy. It gave certain groups in the United States a different view of what they considered to be necessary in a military way in the future of the country. It started us off on an entirely new path.

After that event the United States moved slowly but surely toward the idea of universal service, of the big navy, and the correlative idea that all peace institutions were subject to drastic alteration during war time. Few realized the change ; but it was clearly attested by the ease with which the entire country fell into a new system of military organization in 1916. Universal conscription, industrial and financial mobilization and complete governmental control of all activities—all implying a radical departure from older American ideas—were accepted without the least hesitation by the mass of public opinion. This change is one of the most remarkable chapters in American history ; but few Americans appreciate its significance.

Perhaps the large proportion of foreign-born, accustomed to these ideas, was a factor here ; but the United States pushed these concepts much further than the necessities warranted in the United States. One can understand the complete mobilization of industry, finance and man power abroad in the Great War ; but the United States could have gotten along with a smaller measure of these things than it demanded. And it is a matter of history that they were accomplished with much more difficulty in Great Britain than in America.

As a result the United States to-day has, almost without realizing it, built up the most advanced military policy in the world. This is based upon the National Defence Act of 1920 which was passed quietly without the public paying much attention to it or being fully aware of its significance. By virtue of it the nature of the military establishment

and its distinction from the peace establishment are completely altered. This is clearly stated by no less authorities than General Pershing and the Assistant Secretary of War.

Addressing the last graduating class from the West Point Military Academy of the United States, General Pershing said:—

"You are to help develop a new military system based upon the experience of the World War. No longer are wars settled between armies or professional soldiers, but the entire strength of nations is thrown into the conflict. The wealth, the industries and the manhood are all called upon. Citizens of whatever class or creed and industry in every form, are mobilized.... This requires training and preparation under a system through which the entire resources of the country can be utilized if necessary.... The National Defence Act of 1920 embodies just such an idea and enjoins and directs its peace-time development. Many officers do not yet grasp the idea in all its possibilities, but it is essential that all should comprehend its full import and to that end all should study it carefully...."

In a pamphlet entitled "Industrial Mobilization" issued by the War Department last year, the Assistant Secretary of War said:—

"Wars are no longer fought by the armed forces alone. Every man, woman and child, every resource and every dollar in the entire nation must throw its weight toward victory in time of war...."

In short, to-day the military power of the United States must be measured by its total financial, industrial and labour resources and its total adult population, male and female, of military age. Of course it is recognized that the realization of this requires some preliminary preparation and organization. Plans for this are being developed and in certain current activities one may glimpse the character of the American military policy of the future.

The War Department, in connection with industrial and engineering organizations, has prepared extensive and detailed plans for the industrial side of the new policy. Every large manufacturing establishment in the country has its place in this scheme and is supplied with blue-prints and instructions which will enable it to divert its productive equipment from peace purposes to war purposes over night. Some plants have been altered to make this easier. Tentative tryouts of this system have been held under the auspices of engineering societies and the War Department, and they will be further exercised in the grand national mobilization under the National Defence Act this autumn.

The idea in this mobilization was described by General Pershing, whose valedictory before his retirement it is, as follows:—

"This autumn we are to have a preliminary defence test, to show what progress we are making (in this new policy) and to demonstrate to our people that this is their problem as well as ours, and that it is they, in the last analysis, upon whom the defence of all we cherish must depend.... This test will involve every community, every hamlet and every officer and soldier of the army, as well as every patriotic citizen, all of whom will be expected to participate, if only to report their presence as at some designated place...."

Through this event the country will perhaps become more aware than it has been of the character and comprehensiveness of the military system which has been implanted in it through the inevitable tendencies of martial development the world over. There may be some protest. Peace organizations are talking of counter-demonstrations, and even the Governor of Maine, in replying to a request for co-operation from the War Department, deplored the possible effect of such a national mobilization upon international feeling—especially at a time when relations with Japan are so strained. But it is likely that such protests will be rather against the particular demonstration in question than against the broader conception of military policy which underlies it.

Meanwhile, the public is being accustomed to certain phases of the universal conscription idea by a system of summer training camps. These began with the World War and have since been vastly extended. There are hardly sufficient of these camps to-day to include the citizens and members of the National Guard from all sections of the country, and strong efforts are being made to increase the number. This form of combined summer sport and military training is increasingly popular. Particularly significant is the co-operation of employers in facilitating and making attractive attendance of employes at these camps. An investigation by the National Industrial Conference Board covering prominent business houses, banks and industrial establishments in the vicinity of New York showed that all permitted employes to attend the camps, over seventy-five per cent paid employes for two full weeks of their attendance and twenty-one per cent gave employes regular vacations

with pay in addition to this time. The camps are widely and increasingly propagandized. Women are enlisted in the work of encouraging men to attend them and there is a movement afoot to establish such camps for women as well. All of this is in accord with the tendency in all the major nations to universalize the war machinery and make it identical with peace organization. The movement to limit certain types of armament is perhaps only an indication of the changing emphasis of military policy from specialized equipment and fighting forces to the development and concentration of entire national resources, human and material, upon war. As the big navy idea was the outgrowth of the Spanish-American War, so this new military policy has grown out of the World War and displaced the navy idea in the United States. It means that the next war, at least so far as the United States is concerned, will be a universal effort in which all distinction between combatants and non-combatants will be eradicated, and all persons and things will be war materials and resources.

Indian Economic Studies.

The Madura Saurashtra Community—III.

By K. R. R. Sastry, M.A., F.R.Econ.S. (London).

CHAPTER XI.

Communal Work.

The Saurashtras have a strong *esprit de corps* and this has stood them in good stead in their weaving and dyeing industries. How communally well organized these people are, will be evident from a close study of some of their caste-organizations.

The Saurashtra Sabha easily bears off the palm among such organizations. It was established in 1895 and its objects as evident from their Memorandum of Association and an intimate knowledge of some of their Institutions are as follows :—

1. To manage a school to enable members of their community, to receive on moderate terms a sound, liberal, general and technical education. The Saurashtra High School is maintained by this Sabha.

2. To run the Sree Prasanna Venkateswara Swami's Temple and contribute towards its maintenance—making jewels, vehicles and other things necessary therefor and conducting the festivals thereof.

3. To found charitable Institutions such as choultries, poor houses, etc., for the good of the community.

4. To give, succour to the suffering poor and "the maimed, the lame and the blind" in the community.

5. To give pecuniary grants in aid of Upanayanams (Thread marriages) to the indigent orphans.

6. To erect such works of public utility as bathing ghauts, wells, etc.

7. To promote the social, moral and intellectual advancement of the Saurashtras.

8. To fix and raise subscriptions known as "mahamais" in such manner as the Association may from time to time think of.

9. To sell, improve, manage, develop, lease, mortgage, turn to account or otherwise deal with all or any part of the property of the Association.

Of the above 9 objects which are elaborately drawn up, the School alone is managed efficiently.

For the fulfilment of the above objects, certain guild dues are being levied to add to the corpus of the funds. There are 2 classes of members—paying and non-paying. The paying members have on the sale proceeds contributed to the funds of the Association as stated below :—

(*a*) Local manufacturers of cloths and dyers of foreign piece-goods through brokers—one pie per Rupee (Brokers shall also contribute at the above rate on the total Invoice amount).

(*b*) Dealers in cloths of Benares, Cashmere, Calcutta, Kumbakonam, Kornad, Conjeevaram, Salem, Tanjore, Swamimalai, Pilliyarpalayam and other mofussil stations—per Rupee, half-a-pie.

(*c*) Dealers in Gold Thread—four pies per high standard marc.

(*d*) Dealers in Gold Thread—one pie per low standard marc.

(*e*) Wholesale dealers in cotton yarn and Foreign Piece-Goods—half-an-anna per Rs. 100 sale.

(*f*) Retail dealers in white cotton yarn—half-a-pie per bundle.

(*g*) Retail dealers in coloured cotton yarn—one pie per bundle.

(*h*) Dealers in locally dyed cotton yarn—hlaf-a-pie per Rupee.

(*i*) Dealers in Alizarine dye stuffs—one anna per barrel.

(*j*) Dealers in Aniline colours—one anna per pound.

(*k*) Dealers in Dyed silk—4 pies per seer.

(*l*) Dealers in different oils—one anna per Rs. 100.

(*m*) Dealers in iron—one anna per Rs. 100.

(*n*) Dealers in different grains and other sundry articles of consumption—one anna per Rs. 100.

(*o*) Stake-holders in chits shall contribute a quarter of an anna per Rupee on the amount of the stake.

One has to remark with Professor R. Mukerjea* that this communal Sabha is loosely co-ordinated, "including as it does the different classes of the Saurashtras, artisans, middlemen, traders in silk cloth as well as general merchants in the name of the same caste".

Next in importance is the Madura Saurashtra Co-operative Society, Ltd., registered on 4th November 1918. It started work on the 8th. The object of the Society is the improvement of the economic condition of the weavers and dyers residing in Madura and Ramnad Districts. It shall be competent to,

1. raise the money required for the Society from weavers and others by issue of shares and by borrowing by way of deposits or otherwise ;

2. purchase raw materials and appliances required for the industry and retail the same to the weaver members for cash or credit ;

3. grant loans to members ;

4. purchase improved appliances or let on hire the same ;

5. receive for sale the finished products of the members' looms and sell them to best advantage ; and

6. act as the agent for the joint purchase of domestic and other requirements.

It has more than 750 members on its rolls and its assets stand thus :—

Nominal Capital ..	..	Rs. 1,00,000
Paid-up Capital ..	..	,, 23,000
Reserve Fund ..	..	,, 5,000

During 1919-20, it is reported to have worked at a loss ; and a dividend for the year ending 30th June 1921, was 7½%. The services of a Government Co-operative Inspector have been lent to the Society for the past two years. The marketing business of this Society extends as far as Travancore and Pudukottah. It advances loans at 9⅜%. During 1921-22 a greater dividend was expected. A chit-fund is also conducted by the Society thus encouraging thrift among the weavers. It is popular with the locality and there is scope for branches of this Society in Madura itself.

The Varnashrama Sabha engaged 70 volunteers of the community for persuading the Saurashtras not to drink. Unhappily this Society is not now in working order. The Madura Vidyasrhama Sabha registered on 5th August 1921, a kindred Association whose object is mainly religious, has also started temperance activities as one of its objects. These two Sabhas are in need of active co-operation from the philanthropic workers of the community. Pious wishes never attack the problem ; constant vigilant work can alone remedy the serious defect of drinking.

In August 1921, a free dispensary was established through the kind donations of a few members of the community. That the Hospital is well-equipped is the opinion of the doctor in charge of it. Here the poor alone are treated free.

The Saurashtras since they constitute about a third of the population of the City have successfully taken part in the management of local affairs. On 1st September 1922, there were 10 Saurashtra Municipal Councillors out of 36 ; and 2 of their community have successfully acted as Chairman of the Municipality. The nomination of one Saurashtra to the Madura Devasthanam Committee in August 1922, has been pointed to be the first entry of a Saurashtra into the management of the Sacred Temple of Meenakshi during the last 300 years. One of their representatives is also a member of the local Legislative Council.

An organization of the Saurashtra weavers was started in 1921 under the name of the Asu Machine Sangham. It is holding its meetings regularly once a week. It has 110 members on the rolls. The objects of the Association run as follows :—

1. To encourage the warping industry ;
2. To find improved methods of sizing ;
3. To find a market for sized yarn ; and
4. To encourage new discoveries and inventions connected with the industry.

It is refreshing to note that a member of this Sangham has discovered a sizing machine—already mentioned in Chapter V—hailed as the first of its kind in South India. He has to get it patented. As usual with inventors,

* The present writer's attention, it should be gratefully admitted, was drawn to the study of economic subjects by this distinguished Professor.

he is in need of finance to enable him to come out with his patent.

The movement of the Saurashtra Alphabet deserves a short notice since the community has expressed itself in favour of the Saurashtra alphabet—one of the four Prakrit dialects—in their fifth Saurashtra Brahmana Conference in 1920. It should be borne in mind that their spoken language, called Khatri, has got an admixture of Sauraseni, Vraja and Telugu words and phrases. This admixture is accounted by their migration to Madura after settling at Devagiri (Daulatabad) and Vijayanagar. About sixty years ago one Lakshmanachar invented an alphabet but Venkatasuri of Tanjore continued to write books in Telugu characters. His Bhagavatham, Balaramayanam and Harischandra were all translated into this language. Rama Rai's two readers, subsequent to these, were written in an alphabet which had no resemblance to the two previous ones. Budha Alagiri Ayer of Salem wrote a grammar of the new alphabet. After the 1920 Resolution in favour of the Saurashtra alphabet in Devanagari characters,the Saurashtra Parishad has published in 1920 a Bala Bodhini in Devanagari. Standard translations of books in MSS. are ready and they are delayed in publication owing to want of funds.

There is also a weekly paper in Madura conducted for the benefit of this community among other objects. The history of the "Saurashtra" is briefly told. The paper was first started in Salem in 1916 as a Monthly. On invitation from Madura in 1919 the present editor started it as a monthly on the Vijaya Dasami Day in the same year. It was soon converted into a fortnightly. In 1919 it became a weekly and it is a bi-weekly from 30th September 1922. It is written in Tamil. One or two columns should, in the first instance, be conducted in the Saurashtra language. Efforts may be taken to conduct it as a daily. It has a circulation of over 800.

A glimpse into their secret trade language is, in place, to bring out the strength of their communal ties. The number of terms and phrases borrowed from the craft is increasing every day. The few examples given below will bring out the force of this remark.* Thus a common characteristic of a trading class has well-nigh reached a high stage of development.

No.	Terms Used	Lit. meaning	Spl. meaning
1	Rikhta-kandu	A spindle without yarn.	A man of no status.
2	Muddha	The name of a thick peg which holds one side of the roller.	A man of little sense.
3	Rhetto	The roller used for winding the thread upon the spindles which make a most unpleasant creaking noise.	A talkative person.
4	Kahmeki	A technical term used for cutting the loom off.	To make short work of an undesirable person.

Lest it be remarked that the educated Saurashtras have no common place of meeting each other, a Saurashtra Club was started in 1911. It has got 135 members on its rolls; and the average daily attendance is 24, 50% of whom belong to the younger generation. A few non-Saurashtras who reside in the locality are also members. The Club is managed by a committee of five assisted by two joint secretaries and one treasurer. It has no reserve fund; nor is it a registered concern. A visit to the Club forces on one the conclusion that vigorous exercise is not popular though there is provision laid for tennis. Though the Club gets 2 Dailies, *there is no library at all.* Wherever one tries to scratch the Saurashtra with or without notice, it is well-nigh impossible to trace the culture-nerve in him.

A close perusal of the communal organizations among Saurashtras forces on the enquirer the conclusion that they constitute one of the most well-organized castes in South India. Charity within their community and timely succour for the needy weaver are quite common. Yearning to hear Puranas and faith in Hindu religion and rituals are strong indeed. But here as elsewhere, ill weeds grow apace. The alarmingly high percentage of the habitually drunk in the community is a crying evil. Temperance work is at a standstill for the present. Too many Sabhas, with their dates of Registration and Memoranda of Association, are not sufficient for the purpose. A band of seven with high character engaged in temperance work, is far better than seventy Sabhas. More pointed

* Through the courtesy of the ethnographical writer quoted by the Compiler of the "Madura Guide", p. 150.

attention to this evil is deferred to another Chapter; and much spade work still remains to be done in this all-important line of reform. The Saurashtra Co-operative Society, which is already doing good work by encouraging thrift and helping the needy, may well take up the lesson of the Irish Co-operative movement. "Unless something more can be claimed for the co-operative movement than the improvement of the material conditions, unless it develops the potentialities of human character, it is of little real significance in the permanent reconstruction of Society."*

The Co-operative Society may save the poor Saurashtra weaver from incurring debts; but if it is not a power for good in turning the community away from the tavern, it cannot be said to have contributed to the *lasting* welfare of this enterprising community.

CHAPTER XII.

Labour Conditions.

When a tourist passes through the streets with terraced houses and gates with copper-plated sign-boards, the impression is one of prosperity. But the East End of Madura is elsewhere; the enquirer should go through the narrow streets, lanes and bye-lanes leading to Thirumal Naik's Palace; he should pass through the six Lakshmipuram lanes where the stinking smell emitted by the Anupanady gutter is abominable, and he should also have a sympathetic talk with the poor in Santhaipettai Pudoor struggling in large numbers to get one pail of water from a ½" municipal pipe. Amidst such filthy surroundings, the Saurashtra labourers spend their lives. The effects of such an environment are accelerated by some of their habits to which pointed attention will be drawn in a subsequent Chapter.

The earnings of a Saurashtra labourer are best considered under different branches of Industry. After a fairly exhaustive enquiry into more than 25 cases, the following rate of wages is arrived at in the Silk Weaving Industry:—

A. *Silk Weaving Industry.*

Adults: Males—Rs. 15 to 40 per mensem.
Females—
Silk-work Rs. 3 to Rs. 8 per mensem.
Rhetto-work Rs. 5 to Rs. 10 per mensem.

B. *Mill Workers.*

Among workers in the local Saurashtra Mill, the following rates are returned by the Managing Director which are also confirmed by the labourers themselves:—

	Earnings per mensem.
Adults—	
Male	Rs. 18 12 0 to Rs. 37 8 0
Female	„ 9 6 0 to „ 16 14 0
Children	„ 7 8 0 to „ 15 0 0

C. *Earnings of a Weaver.*

The weaver at the primitive loom is able to earn from Rs. 15 to Rs. 25 per mensem. If he is highly efficient he may earn upto a maximum of Rs. 50, in which case, he hires employees for his other looms.

When fly-shuttles are engaged, the output is greater within a given time and his earnings are correspondingly higher. Besides the earnings from his fly-shuttle, he employs labourers to work in two or three other shuttles owned by him. In such a case the weaver's earnings range from Rs. 30 to Rs. 60.

D. *Dyeing Industry.*

	Earnings per mensem.
1. Dyeing and Steaming Adults, Male ..	Rs. 30 to Rs. 60
2. Mordanting Female ..	Rs. 7 to Rs. 15
3. Drying and Cleaning Female ..	Rs. 6 to Rs. 7
4. Packing and Bundling Female ..	Rs. 15 to Rs. 24

E. *Chungudy Tying.*

Adults: Female at As. 2 per 1000 big dots.. ..	Rs. 7 8 0 to Rs. 9
at As. 4 per 1000 fine dots	Rs. 15 to Rs. 18

In the case of male adults, the dyeing industry is the most paying, since it affords facilities for earning Rs. 60 per mensem. The Fly-Shuttle worker gets from Rs. 30 to Rs. 60 per mensem. The Mill worker comes next with his earning ranging from Rs. 18 to Rs. 37-8-0. The Silk weaver is able to earn from Rs. 15 to Rs. 40, while the ordinary hand-loom weaver earns only Rs. 15 to Rs. 25.

For female adults the process of bundling the dyed yarn fetches from Rs. 15 to Rs. 24 per mensem. Chungudy tying, their monopoly industry, brings in from Rs. 15 to Rs. 18 if it is of the finer type. Mill-work fetches them from Rs. 9-6-0 to Rs. 16-14-0. Other lines of work are comparatively less paying since their wages range from Rs. 3 to Rs. 7 per mensem. Whether she be rich or poor the Saurashtra woman belongs to the productive class of workers; never does she idle away her time in vain talks or gossips like too many of her sisters in other communities. It may be mentioned in passing that the Saurashtra woman saves what she earns and keeps it separately. In times of urgency, she lends

* *Vide* "Rural Reconstruction in Ireland"—Smith-Gordon and Staples. Page 259.

money to her husband only and that, for interest to be strictly paid back at the next possible occasion.

How the Saurashtra labourer spends his money, constitutes an important branch of investigation by itself. The results of the enquiry into ten typical families in almost all the important representative quarters, are stated below :—

I. *One family of Hand-loom Weaver in Lakshmipuram Lane No.* 5.

General Particulars	Income per mensem	Expenses	Savings
Total number in family: 1 Male, 1 Female & 1 Child. Size of the room : 10′ x 8′. Bathing facilities : No well. Latrine : Nil.	Property : One house. Income Rs. Male 12 Female 3 Rent 3 — Total Rs. 18	Rs. Food 12 Rent Nil Clothing 1 Fuel & light 3 Education 1 Sundries 1 — Total Rs. 18	Saving Nil, Indebtedness Nil. Net saving Nil.

Remarks :—He is suffering from periodic ailments, and leading a hand-to-mouth existence with the help of rent from a portion of his house.

II. *A Fly-Shuttle Worker's Family.*

General Particulars	Income per mensem	Expenses	Savings
Total number : 1 Male, 1 Female & 4 Children. Size of bed room : 10′ x 12′. Bathing facilities : No well. A pipe near by. Latrine : Nil.	Property : A house on mortgage. Income Rs. Male 23 Female 3 — Total Rs. 26	Rs. Food 16-8 Rent Nil. Clothing 2 Fuel and light 3-8 Education 2 Sundries 1 — Total Rs. 25	Saving Re. 1 in Chit. Indebtedness Nil. Net saving Re.1.

Remarks :—Since he holds a house on mortgage for Rs. 600, he pays no rent ; hence a petty saving of Re. 1 which is reported to be not always possible, *e.g.*, in case of sickness. The complaint is that the family is having only 2 meals a day.

III. *An Efficient Hand-loom Weaver in Lakshmipuram Lane No.* 5.

General Particulars	Income per mensem	Expenses	Savings
Total number : 1 Male, 1 Female & 3 Children. Size of bed room : 9′ x 10′. Bathing facilities : No well. Latrine Nil.	Property : A house. Income Rs. Male 45 Female 5 — Total Rs. 50	Rs. Food 26 Rent Nil. Clothing 4 Fuel and light 4 Education 10 Sundries 1 — Total Rs. 45	Saving Rs. 5 in Chit. Indebtedness Nil. Net saving Rs.5.

Remarks :—This is the case of a very capable worker who also hires 3 other hand-looms.

IV. *A Dye Worker in the East Gate Street.*

General Particulars	Income per mensem	Expenses	Savings
Total number : 1 Male, 1 Female & 6 Children. Size of the bed room : 12′ x 18′. Bathing facilities : A well. Latrine : A small one.	Property : A house. Income Rs. Male 60 Female 5 2 Sons 27 — Total Rs. 92	Rs. Food 40 Rent Nil Clothing 10 Fuel & light 5 Education 15 Sundries 7 — Total Rs. 77	Saving Rs. 15 in Chits. Indebtedness Nil. Net saving Rs. 15.

Remarks :—This is the case of an efficient dye-worker who has 2 earning sons. The sundries raising to Rs. 7 was found out to be due to the drinking habit of a male worker. Two of the aged sons are having their sleeping accommodation in a dye-factory near by.

V. *A Hand-loom Weaver in Lakshmipuram Lane No.* 6.

General Particulars	Income per mensem	Expenses	Savings
Total number : 1 Male, 1 Female & 2 Children. Size of the bed room : 8′ x 12′. Bathing facilities : Nil Latrine : Nil	Property : A house worth Rs. 2,000. Income Rs. Male 25 Female 5 — Total Rs. 30	Rs. Food 19 Rent Nil Clothing 2 Fuel & light 2 Education 2 Sundries 4 — Total Rs. 29	Saving Re. 1 in Chit. Indebtedness Nil. Net saving Re.1.

Remarks :—The expense under sundries is remarkable. Accommodation is quite insufficient. The hand-loom is also worked in the same room used for bedding.

VI. *Another Weaver in Kan Palayam.*

General Particulars	Income per mensem	Expenses	Savings
Total number : 1 Male, 1 Female & 2 Children. Size of bed room : 8′ x 8′. Bathing facilities : A pipe near by. Latrine : Nil	Property : Nil Income Rs. Male 30 Female 10 — Total Rs. 40	Rs. Food 22 Rent 2 Clothing 4 Fuel & light 3-8 Education 1 Sundries 1-8 — Total Rs. 34	Saving Rs. 6 in Chit. Indebtedness Nil. Net saving Rs.6.

Remarks :—The savings which appear to be considerable in this case are due to the active co-operation of the female worker. A dirty ill-ventilated room is their lodging.

VII. *A Silk Weaver in Lakshmipuram Lane No.* 4.

General Particulars	Income per mensem	Expenses	Savings
Total number : 1 Male, 1 Female & 3 Children. Size of bed room : 9′ x 10′. Bathing facilities : A pipe near by. Latrine : Nil	Property : Nil Income Rs. Male 20 Female 5 — Total Rs. 25	Rs. Food 18 Rent 2 Clothing 1 Fuel & light 2 Education 1 Sundries 1 — Total Rs. 25	Saving Nil. Indebtedness Nil. Net saving Nil.

Remarks :—This is the case of a very poor family. They are having only 2 meals a day. During certain months the family is also reported to incur debts ; but owing to the thrifty household management they are able to lead this hand-to-mouth existence.

VIII. *A Weaver in Santhaipettai Pudoor.*

General Particulars	Income per mensem	Expenses	Savings
Total number : 1 Male, 2 Females & 2 Children. Size of bed room : 8′ x 8′. Bathing facilities : Pipe near by. Latrine : Nil	Property : Nil Income Rs. Males 20 Females 7 & 10 — Total Rs. 37	Rs. Food 22 Rent 3 Clothing 4 Fuel & light 3 Education 2 Sundries 1 — Total Rs. 35	Saving Rs. 2 in Chit. Indebtedness Nil. Net saving Rs.2.

Remarks :—It should be noted that the earning of his widowed sister is helping him to run the household. The thrifty management of the house is remarkable.

IX. *A Chungudy Dyer near Mariamman Tank.*

General Particulars	Income per mensem	Expenses	Savings
Total number : 1 Male, 1 Female & 3 Children. Size of bed room : 7′ x 8′. Bathing facilities : A well near by. Latrine : Nil	Property : Nil Income Rs. Male 30 Female 9 — Total Rs. 39	Rs. Food 22 Rent 2 Clothing 2 Fuel & light 3 Education 3 Sundries 5 — Total Rs. 37	Saving Rs. 2 in Chit. Indebtedness Nil. Net saving Rs.2.

Remarks :—The increase under sundries is to be noted. The earning female worker through "Chungudy dyeing", is helping the family considerably.

X. *A Dye-Worker on the Southern Side of the Thirumala Naik's Mal.*

General Particulars	Income per mensem	Expenses	Savings
Total number : 2 Males, 1 Female & 1 Child. Size of room 10′ x 12′. Bathing facilities : A pipe 10 yards off. Latrine : An apology for one.	Property : A house worth Rs. 1,500. Income Rs. Male 40 Female 7 — Total Rs. 47	Rs. Food 2-8 Rent Nil Clothing 4 Fuel & light 2-8 Education 2 Interest 15 Sundries 1 — Total Rs. 47	Savings Nil. Indebtedness Rs.2,000 A family debt of Rs.2,000

Remarks :—This is an interesting family. The old father is aged 75 and he has left for the son a debt of Rs. 2,000. The interest alone by way of Rs. 15 per mensem takes away 37½% of his earnings. When he will repay the capital is a problem.

Certain general observations suggest themselves from this study which, though only fairly exhaustive, is typical. Its scientific value is enhanced by confirmation from more than 30 representative men of the community.

So far as accommodation is concerned most of their lodgings are provided with one room which is at once the safe room, the hand-loom work room, and the bedding room. There is another room bound by curtains which is used as a store, kitchen, and dining room. Invariably, there is no latrine or only an apology for the same which is difficult for a bulky human being to enter even. This is a serious sanitary and moral defect. If a pointed question is put to them the reply is that 'there are open plots'. Comment is needless. Nor is there proper bathing facility for the class of poor weavers. The number of pipes is not sufficient, nor are there good wells to fill up the gaps in their needy places.

The weavers and dyers generally do not have considerable property ; the only family asset is a house in 5 out of 10 cases. The female workers are *indispensable.* In 9 out of 10 cases, their earnings alone save the family from running into debts, not to mention the monthly chits of a few Rupees. The case of the first 2 families where the females earn only Rs.3 each, is explained by the fact that domestic business and the initial help rendered to the husband in the warping process leave them little time to turn to Chungudy dyeing.

More cases are necessary to arrive at the proportion of expenses under different heads. Since the last 3 decades, the item of education is a permanent avenue of expenditure in their family budget. Among the dye workers the disproportionately high sums under "sundries" constitute not merely a striking figure ; with the help of a Saurashtra gentleman respected by their community, the admission has been got from these three families, that it is due to the drinking habit. Further the proportion of drunkards among the dyers is decidedly higher than among the weavers. He who runs may read into these 10 tables, a thrifty management of their household by the Saurashtra women.

It should be noted that no provision has been made for periodic ailments by these families. It is also relevant to remember that cholera and fever claim a heavy toll from the Saurashtra community. The saving of Rs. 2 has thus to be discounted at its true economic value to a community which does not lay by anything for bad times. 7 cases out of 10 may be taken to lead only a hand-to-mouth existence. When the proportion of saving to the gross earnings is gone into, 10% to 16% characterize the 3 passable families. Finally the indebtedness of No. X family where 37½% of the family's earnings is necessary to repay the interest alone, is a very unfortunate case and it strikes the present writer as an exceptional instance. The bearing of these observations on the problem of "inequality" will be taken up in the next Chapter.

The following Press Communique dated, Fort St. George, the 7th August 1925, has been issued by the Madras Government :—Three previous communiques issued on the 5th March 1924, 7th June 1924 and the 18th February 1925 reviewed the condition of the Pearl oyster on the banks off Tuticorin and Tiruchendur since their appearance in 1922. A recent detailed inspection carried out by the Director of Fisheries has shown that oysters have reached their maximum size on many of the banks and that their growth and condition are satisfactory in every way. It is estimated that on the Tholayaram Par alone there are nearly 12 crores of mature oysters. The prospects of a remunerative Pearl fishery in 1926 are therefore reasonably certain.

Indian Currency Commission.

By A. S. Venkataraman, B.A., L.T.

In his opening speech of the Legislative Assembly, His Excellency Lord Reading announced the appointment of a Royal Currency Commission in these words :—"With the return of sterling to a parity with gold, there is fulfilled one of the most important conditions requisite for a fruitful re-examination of our Indian problems. The position has been considered in consultation with the Secretary of State and I am now able to announce that His Majesty the King has approved the appointment of a Royal Commission on Indian Currency. The terms of reference to the Commission will be to examine the Indian Currency and Exchange system and practice, to consider whether any modifications are desirable in the interests of India and to make recommendations."

In the February Session of the Assembly, the Finance Member expressed himself as against the appointment of any commission and shared the view that the demand for stabilization was premature, though the Assembly, as a body, declared itself in favour of the appointment of a committee on Currency, with an Indian majority and an Indian Chairman. During his stay in England, the Governor-General became convinced of the necessity to appoint a commission, as a sequel to the return of sterling to a parity with gold. For some time past, for a period of three years and over, the currency in England has been one which is usually described as "managed currency". "Managed Currencies", generally, are also mismanaged but the English Currency was an apparent exception. The "Managed Currency" consists of currency notes limited in amount by the control of credit (the Bank of England regulates the volume of credit) as against a currency limited in amount by legal enactment, the Bank's control itself being governed by the supply of gold. The policy of the Bank of England was "to effect a steady appreciation of sterling with a view to attaining parity with the dollar and the restoration of the gold standard". One wonders whether stability and economy, advantages claimed for this currency, were not purchased at too heavy a price and whether British Trade was not sacrificed at the altar of her Currency.

It is but natural to find that mercantile India is desirous of a return to pre-war conditions of currency in sympathy with a universal demand in the West. The condition of India is such that willy nilly, her currency system has to keep on changing with the conditions in other countries. Her relations are with countries with gold-standard, which, for some time now, used only sterling not practically convertible into gold. Dealing with gold-standard-using countries, hers is not a gold standard itself. The internal standard is a token Rupee, while the external, is a Sovereign. While the external standard is available at fluctuating rates for trade purposes, the internal currency is neither convertible into external currency nor capable of being contracted or retracted. If it is agreed that the Rate of Exchange between England and India should tend to be the ratio between the purchasing powers of the Indian Currency in India and the English Currency in England, it must not be forgotten that the effects on the price-levels in the two countries are bound to be varied because of the different standards. The charges, against this standard which is neither fish, nor flesh nor even good red-herring, are that it fails (1) "to stabilize Exchanges and to avoid large fluctuations"; (2) "to stabilize price-levels"; (3) to ensure convertibility of the internal currency into international; (4) "to economize the cost of the gold standard". These are defects germane to the standard and unless they are removed, as an authority thinks, the attempt to stabilize prices is bound to have mischievous effects on the Exchange, if it is not to cease to be a passive link in trade between two countries, as any good Exchange should function.

Apart from the defects of the Standard, the Exchange Problem has at present assumed a serious aspect. In examining the currency policy of the Government, Sir Purushottamdas observes "What is the other consequence of the high exchange? (One consequence, the farmer, a loser by High Exchange). It is a direct encouragement to larger purchases abroad both by the people in this country and by the Government. When we read in English papers frantic appeals to promises after promises by party leaders to relieve English unemployment, to keep the factories going and to subsidize the export trade of England by trade facilities and in every other way, when we put two and two together with

regard to the Government of India, a subordinate branch of His Majesty's Government, it would be more than human for us not to seek and find the proper explanation of Government's Exchange policy in their desire to serve the industrial interests of the United Kingdom and this at whose sacrifice? At the sacrifice of the agriculturists." It was the Babington-Smith Committee that raised the rate to 2*s.* gold and it has come in for a good deal of just condemnation at the hands of critics. It proceeded on the assumption that the Rupee had appreciated, in other words, prices had fallen; but the incontrovertible fact, as can be gathered from figures, relating to price of bar of gold in Bombay, price of silver in Bombay and the index number to prices (1913. 100), is, that along with the rise in the price of silver, there was a fall in the value of the Rupee and that there was a tremendous depreciation in internal currency. The egregious blunder that was committed by Babington-Smith Committee was its failure to separate the Rupee as currency and measure of value from the Rupee as an ingot of silver. The 2*s.* rate might have been fictitious. Now it is a moot question whether 1*s.* 4*d.* is a return to pre-war conditions. Measured in terms of prices, this 1*s.* 4*d.* of 1925 is not the same as 1*s.* 4*d.* of 1915, while the index number of 1924 is 176 for 100 of 1914, so that a return to pre-war conditions might not imply a return to 1*s.* 4*d.* but 2*s.* if it is to mean a return to pre-war prices. And after all, there is no benefit in so doing. That seems to be the Government view and there is some truth in it. To the merchant and manufacturer, the product will fetch 76% less while 76% more will have to be given to the investing and earning classes. If any rate is preferable, 1*s.* 6*d.*, even if it be "the pet rate of the Blacket bag", might be fixed upon. It does not jeopardize the position of Trade and Industry while that of the investing and earning classes might be conserved. It has the added advantage of being quite recent in point of time.

Much is talked of the Balance of Trade as determining the exchange ratio of a currency. The more precise view would favour the purchasing power as the determining factor. When there are two countries, the stabilization of Exchange is dependent on the control of the purchasing power of currencies, which again is possible, only when there is some controlling instrument to act as a common regulator to effect changes in the desired directions. This is easy in countries having a gold-standard.

When all is said and done, the key-note of success in any currency settlement is confidence first, confidence second, and confidence throughout and this is conspicuous by its absence. There are inherent defects in the Gold-Exchange Standard, and it is the hallmark of a dependency. "It is neither fool-proof nor knave-proof." The operation of this standard in times of crisis, leads to, not an unjust suspicion that while India demanded gold, England gave her goods in plenty. The export of Silver was forbidden and the import of Gold denied. The Standard has been tried and found wanting. The possibility of doing away with it should not be precluded by the terms of reference. Secondly, this lack of confidence, the foundation-stone of success in any settlement, receives an additional reinforcement in, that the changes or the proposals do always emanate from an Executive that should be described as irresponsible. The Assembly is fast becoming a thoroughly representative legislature, but it is powerless before an irresponsible Executive.

Thirdly and finally, it is to be remembered that there is not an unnatural distrust and suspicion in the minds of the people regarding the proposals emanating from the Executive. The personnel of the new committee has not been approved by the legislature. A proper Chairman would be a currency expert like Sir John Bradbury. The Indians, with the exception of one, base their claims on the credentials from the Government as "good boys", pledged to safeguard the Government views. Sir Purushottamdas is a big proposition but his voice is that of a feeble minority. In the February Session, the Assembly demanded a currency commission with an Indian majority and an Indian Chairman. Its demand has been rejected and the Assembly has now carried the adjournment motion on the personnel of the Commission. A significant omission is that of Sir Dalal whose position against the 2*s.* gold has been justified by events.

The Indian Pavilion at Wembley has just been enriched, states the *Morning Post*, by the loan of a collection of water-colour paintings by the Indian artist, Mr. S. Fyzee Rahamin, of Bombay. Two of his paintings have been acquired by the National Gallery, and on his last visit to the Pavilion the Earl of Birkenhead also bought two of them to hang at the India Office.

The Andhra University Bill.

By S. Subbarama Aiyar, M.A.,
Senior Lecturer in Economics, Madras Christian College.

Sir A. P. Patro, the Minister for Education, has added another feather to his cap by introducing the Andhra University Bill in the Madras Legislative Council. This is the result of the persistent agitation kept up by certain Andhra leaders of public opinion for a local University for the Andhra Province. Now the State is called on to create a new University on behalf of the Andhras making use of the several colleges which lie scattered from Vizagapatam to Nellore and Rajamundry to Bezwada.

The constitution proposed for the new University is similar in several respects to the newly created Madras University. The Syndicate, the Academic Council and the Senate are all there exercising very similar powers and constituted in the same manner but with less numbers in each body than in the parent University. The ideal, again, as in Madras, is to combine the features of the teaching and affiliating types of Universities. There are, however, a few novel features in this Bill. In the first place, the University and First Grade colleges (*i.e.*, those that teach up to the B.A. Honours and Pass standards respectively) are to be situated, as far as possible, in one of the following towns—Vizagapatam, Rajamundry and Anantapur—or within a radius of 10 miles from the limits thereof. Secondly, greater prominence is to be given to the vernacular studies. We are also told in the statement of objects and reasons that "an aim of the new University is to organize a scheme of technical studies which will have a direct relationship to the industries of the Telugu country and to the possible careers open to the graduates and diploma holders of the University".

The location of the University has been a subject of some controversy in the Press. While the three centres are recognized as suitable for the purpose, no mention is made in the Bill about the exact place where the buildings, laboratories, museums, workshops and equipment which the University is going to possess are to be located.

When the Madras University Act was passed, it was contemplated that new centres of University life should spring up in suitable areas with a view to eliminate the present anomaly between the constituent and affiliated colleges. It is abundantly clear that the progress of University life in the city of Madras is retarded by the suspicions and even antagonism of the affiliated colleges which believe, rightly or wrongly, that their position is likely to be jeopardized by such progress concentrated in Madras.

For this and other reasons, new University centres are to be welcomed. The Tamil Nadu is already clamouring for one. Then there is the demand for the Kerala University. But if all these schemes materialize the question arises as to what would be the future of the Madras University and its constituent colleges. It is a well-known fact that almost all the students in the Madras colleges hail from Andhradesa, Tamil Nadu and Kerala and only a handful from the City of Madras. It may be said that the Metropolis will be able to attract a large number, but unless the Madras University has an 'individuality' of its own to distinguish it from the Tamil, Andhra and Kerala Universities it is perhaps not worth while to attract the students from the several areas. In any case, the fee fund of the Madras University in virtue of its being an examining body for all the colleges in the Presidency and its setting the standard of teaching and efficiency for all of them will disappear or dwindle in importance. It remains to be seen whether this will be an advantage to the progress of higher education in this Presidency.

The creation of new University centres and the multiplication of colleges intensify the problem of unemployment among their *alumni*. The present Bill, it is true, "provides for the establishment of a college for technical and scientific studies and also for a University Employment Bureau which will be able among other things to investigate the problem of unemployment and make recommendations to the University." Unless the courses of studies are radically altered, there is very little chance of the University products being absorbed inthe several occupations in our country. The Bill, on the whole, is conceived on broad lines. The success of the measure depends on the enthusiastic co-operation of the present colleges situated in the Andhradesa and the amount of money that the Government is likely to offer to finance the scheme.

The Textile Trade in India.

By Rt. Hon. Thomas Shaw, C.B.E., M.P.,*
Minister of Labour in the Labour Government.

It is extraordinarily difficult to give any real idea of the part that India is playing in the Textile Trade. To state that she has so many spindles and so many looms, and that the average wages are at a certain height, is valuable as an indication of progress, but for Textile Workers who are seeking to find exactly what this indication means, in an international economic sense, there are many other factors that must be borne in mind. Not only do we want to know the amount of machinery, but the number of hours this machinery effectively works per week and the amount of production that is got from it, what kind of goods are manufactured, the fineness of these goods and their value, the cost of production per unit, and other essential factors without which it is impossible to draw a correct picture of India's position in the international textile world.

It is impossible to get the truth about some factors without a prolonged and expert investigation on the spot, and the particulars I am giving in this communication to the members of the International Committee must be read in the light of the remarks I have made above. I must confine myself to making a statement as to hours and wages without attempting in any way to compare costs of production or to estimate what those hours and wages mean in unfair competition with European or Overseas countries. As far as possible, I am giving only figures which have been officially obtained, or facts that have been ascertained by students who may be taken as being absolutely reliable. This precaution is necessary in view of the fact that statements about India vary so widely, and political feeling enters so often into the statements that the greatest caution must be exercised in order to get a true picture. There are statements made by people who see only the horrors of the workers' conditions in India and have no knowledge whatever of the internal economy of the Textile Trades, and there are statements made by interested persons who seek to show that production in India costs as much as, if not more than, in European countries. Between the two sets of statements there is such a gulf that it is necessary to use the greatest care in trying to find the truth.

With acknowledgment to "*New India*".

There seems to be little doubt that the progress made in India during the last few years has been much greater than that made in other Far Eastern countries. Sir Stanley Reed, in a Foreword to a book by Mr. A. R. Burnett-Hurst, Master of Science, who prepared a Report for the University of London, says that in March, 1925, the future of manufactured industries in India was giving food for anxious thought. He says that, despite natural advantages—raw materials at their doors and an immense home market—Bombay yarn was being undersold in the local market by both Japan and China. Not only the price was lower, but the quality of Japanese and Chinese yarn was superior. This underselling was taking place in spite of a substantial measure of protection for the Indian Industry. The explanation generally given is that labour in Japan and Shanghai is cheaper and more efficient than in Bombay. Sir Stanley Reed is of the opinion that the prosperity of India is not so much a question of tariffs as of the necessity for increasing the efficiency and stability of the workers. He makes the statement that, under ordinary conditions, there is never a sufficient supply of labour for Indian Industries and that, in relation to quality and quantity of output, labour is not what is generally called "cheap".

The Indian Textile worker is generally an agriculturist and always intends to return to agriculture. There is a constant migration to the towns, but the worker looks upon factory work as a disagreeable necessity and only works long enough in the mill to earn sufficient to enable him to go back to his village and settle down again to agriculture.

It appears from Government publications and from other information at my disposal, that the Indian Government has rigidly adhered to the engagements she entered into at Washington, and the Factory Act, which came into force in July, 1922, really does limit the hours of labour to 60 per week for adults and to not more than 6 hours a day for children, and the working week only consists of six days. After the strike in Bombay City in 1920, the mill-owners reduced the hours of work for adults to 10 and for children to 5 per day. Where two shifts are worked at those mills

which are outside the Bombay Mill-Owners' Association, apparently the shifts are of eight hours' duration. The following table shows the average hours of labour in different centres in August 1923 :—

Centre	Men	Women	Children
Bombay City ...	10	9 1/2	4 2/3
Ahmedabad ...	10	9 5/6	5
Sholapur ...	10	10	5
Baroda State ...	11 1/3	10 5/6	5 1/2
Bombay Presidency ...	10 1/12	9 3/5	5
"Other Centres" ...	10 1/3	9 5/6	5 1/10

Apparently there are only three days' holiday per year in addition to the weekly rest-day, but the conditions of working are so different that it is unwise to assume that the average Indian worker only rests on three days per year in addition to the weekly day of rest.

There seems to be no doubt that, in comparison with 1914, the real purchasing power of the Textile Workers is higher to-day than before the War. Taking Bombay City and Bombay Presidency, about which I am particularly writing, it is said that, in 1921, the real wages were respectively 12 per cent and 17 per cent higher than in 1914. Before giving the actual wages earned, it is essential to note that the weavers, for instance, in an overwhelming number of cases only have two looms, where, in England, three or four looms would be given. The following table will give an idea as to the average daily earnings of the weavers in 1923. (In the table Rs.=rupees ; A.=anna ; P.=pie.)

	Weavers with											
	One Loom			Two Looms			Three Looms			Four Looms		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Bombay City	1	9	5	1	11	3	2	2	3	2	9	3
Ahmedabad	...			1	10	5	2	8	7	3	1	1
Sholapur ...	0	12	6	1	9	4	...			3	13	7
Baroda State	...			1	5	2	2	12	9	2	10	5
"Other Centres"...	0	10	1	1	8	2	2	1	0	2	5	6

The average daily earnings of mule spinners are 1r. 13a. 11p. in Bombay, 1r. 2a. 10p. in Ahmedabad and 1r. 7a. 11p. in Sholapur. Young men earn from about 11a. 8p. in Bombay to 7a. 7p. in Sholapur. Half-timers are paid from 6a. 3p. in Bombay to 4a. in Sholapur. Adult piecers or spinners' assistants earn about 1r. 4a.9p. in Bombay and 1r.2a. in Ahmedabad, and much lower wages are reported from other centres. Winders earn from 14 annas in Bombay and 13a. 4p. in Ahmedabad to as low as 7d. 10. in Sholapur. (The rupee is generally calculated as being equivalent to $1\frac{1}{3}$ English shillings and there are 16 annas to a rupee and 12 pies to an anna. The value of the rupee is, however, not fixed, and may vary from day to day.) In 1923, there were 85 cotton factories in Bombay City and Island, 76 in Ahmedabad and the total for the Presidency was 192. The number of factories, including cotton mills, was 1,120, of which 304 were in Bombay (City and Island), and 145 in Ahmedabad. The cotton mill industry of the Presidency gave employment in the same year to 237,000, of whom 145,000 were in Bombay (City and Island), 54,000 in Ahmedabad and 17,000 in Sholapur.

Profits are said to have been enormous, though again it is as well always to take with reserve any statement that has not been carefully checked. In 1921, in Bombay, bonuses were paid of a month's wages in most cases to all workers who had worked in the mills for a certain number of months. The same principle was followed at most of the mills in Ahmedabad. This, in itself, will show how different are the conditions of labour and how extraordinary the profits of the employers must have been.

It is quite wrong to assume that because Indian workers have, apparently, no fixed and substantial organizations such as exist in European countries, that they are helpless in face of their employers. It is perfectly true that Unions seem to spring into being for the purpose of a particular strike and then disappear rapidly. When the employers forced a reduction in Ahmedabad, there occurred one of the largest strikes of Indian history. 48,000 workers were affected, and nearly all the mills remained closed from the 1st April to the 4th June. This great strike of the workers in 1923—lasting as it did for over two months—shows that the workers of India, if properly organized, would not be without power in their own country.

Infant mortality in Bombay is simply appalling. The official figures are said not to be strictly correct, because of the fact that the registration is not perfect, but even with every allowance made for imperfections in statistics, it is still estimated that 500 children out of every 1,000 die within the first year of life. In Bombay, it is true that enormous

improvements have been made since the War in the working hours and in the raising of the age of children before they go to work. In 1911, children of 9 could be employed for 7 hours a day in the factories; they were supposed not to work full-time until the age of 14. As it was practically impossible, however, to ascertain the correct age of the child, it is unquestionable that children went to work even before these ages. Now, a child must be 12 years of age before being allowed to work half-time, and, though it would be too much to say that there are no evasions of the law, it is at least safe to say that the relative position, as compared with pre-War times, is immensely better.

There is no question that the excessively long hours make the position almost intolerable for the married women-workers, and the following description, taken from the work of Mr. Burnett-Hurst, will speak more eloquently than I can :—

The life of the married woman-worker with young children is a hard one. She has to rise before daybreak, prepare the food of the household, give attention to the children, and sometimes wash the clothes of the family she has, before she can go to work. At mid-day, she usually returns home, prepares another meal and nurses her infant. She resumes her duties at the mill in the afternoon and, after several hours' hard work, returns to her room in the evening, only to face more household duties—to fetch water, cook the food and clean the utensils. There is no leisure for her, and even if there were, she would be too fatigued to take advantage of it. Nevertheless, in the opinion of Dr. Barnes, she is better off in the healthier and more hygienic surroundings of the mill, even though the air is fibre-laden, than in the impure atmosphere of the chawl. Her children are neglected, as she has little spare time to give them. Only 3 mills provide creches; consequently, many a mother is compelled to leave her little ones in the care of elder children or neighbours. If the mother is unable to leave the mill to feed the infant, either it is brought to her at the risk of catching a chill, or it is fed on impure buffalo's milk.

The details given up to now concern cotton trade workers only. The jute industry is centred in Calcutta, and it appears that there is a plentiful supply of workers, which is rather remarkable, when one considers that there is a chronic shortage of labour in tea-gardens, etc. In the Calcutta jute mills, the average weekly wages earned are, for men, 3 rupees 10 annas, including a special allowance, and for females, 2 rupees 9 annas. Male workers, on piece work, average, with the special allowance, from 6 to 9 rupees, and females are said to average from 5 to 10 rupees. Half-time workers average 1 rupee 12 annas. These wages are for a week of 4 days; the mills at present are running short-time. The mill workers generally work in families, and often supplement their wages by working in the fields at the week-end. There seems to be a complicated method of working in shifts, and many workers work $8\frac{1}{2}$, $9\frac{1}{2}$ and 9 hours respectively per day. Piece-workers are said to work 11 hours with long intervals of rest. Over-time, when worked, is paid at the rate of time and a half.

The housing of the workers in Calcutta is said to be very much better than in Bombay, and is generally provided by the employers. Children are only employed in spinning as "doffers," that is, taking the bobbins from the spindles. The same law as to age applies as in Bombay, and it is said that only 6% of the workers in the jute mills are children. It appears also to be certain that much more care is taken of the workers' health in Calcutta than in Bombay, and that generally the conditions are better.

The centre of the jute industry in Great Britain is Dundee in Scotland, and the Dundee workers complain bitterly against the competition from India. It is said that there are 49,000 jute-looms in India. The lowest wages in Dundee are 26*s.* 6*d.* a week for preparatory workers, 30*s.* 6*d.* to 48*s.* for spinners, according to the number of spindles, and an average from 35*s.* to 37*s.* 6*d.* for weavers. This is for a week of 48 hours. It is as well to remember, however, that there is a difference in the quality of the labour, and that the number of individuals employed to produce articles is greater in India than in Dundee. I think I have said enough to show that, as in the case of China, the conditions of the Textile Workers are woefully bad, whether in Bombay, where the capital is almost exclusively Indian, or in Calcutta, where a very large proportion of the capital is in the hands of Scottish manufacturers. Whatever may be the political conditions, the workers are underpaid and are working long hours in bad conditions, whether the employer be an Indian, an Englishman, or a Scotsman.

I venture to express the opinion that the British Textile Workers have not only a special interest but a special responsibility with regard to the Indian workers, and that it would be not only a kindly act to hold out the hand of fellowship and help to the Indian Textile Workers, but, at the same time, plain common sense. What is the use of good organization in some countries in the Textile Industry, if other countries are allowed to remain in the position of India? There is no industry in the world which is a world-export industry in the same sense as the Textile Industry, particularly the Cotton branch of it.

The next meeting of the International Committee ought to consider, with great care, the question of conditions in the Far East, and be willing to take such steps as will help the workers to organize in those countries. Unfortunately, the jute workers of Scotland are not affiliated to our International, but I am corresponding with the Secretary and hope that the Scottish Textile Workers may see their way to join our organization.

Cocoanut Oil Industries in Madras.

The following is an extract from the Report of the Department of Industries, Madras, for the year ended the 31st March, 1924 :—

The possibilities of developing the extraction of cocoanut oil on the East Coast of the Presidency were under the consideration of the Department during the year. It was suggested that an oil-mill should be started on the East Coast primarily for the extraction of oil from copra though the possibility of utilizing the mill for demonstrating the commercial extraction of oil from other seeds such as gingelly, groundnut and castor particularly, for example, when the high price of copra rendered it uneconomical to extract cocoanut oil, was also examined. The desiccation of cocoanut and its preparation for export, and the preparation of coir and fibre either as independent units or in conjunction with the proposed oil-mill have also been under investigation. A consideration of the statistics which were collected in respect of the production of and trade in cocoanuts, and the mills which already existed for the expression of cocoanut oil in the area which offered the best prospects for the establishment of a mill, and a discussion with those engaged or interested in cocoanut oil pressing and the trade in coir products, indicated that no necessity existed for the establishment of a demonstration plant under the control of Government which would necessarily compete with the existing presses. Government, therefore, decided to abandon the proposal to establish a demonstration factory on the East Coast for the manufacture of oil from cocoanuts and ordered that the Department should render all possible assistance to persons who contemplated the establishment of oil-mills not only in the matter of applying for aid under the State Aid to Industries Act, but also by rendering technical assistance in the way of preparing plans and estimates for projected mills and by advising in regard to the prospects of success of such concerns.

As regards the development of the coir industry on the East Coast and the manufacture of coir matting and ropes, the first requisite for progress is obviously the production of good quality fibre. The industry is already in existence in certain of the coast tracts in the Godavari delta, though to a small extent and on primitive lines, and with a view to improve the quality of the fibre, instructions for the retting of cocoanut husk for extraction of clean fibre and for the spinning and weaving of coir yarn, were drawn up and copies were forwarded to the district officers of the Department for distribution to those interested in the industry. In regard to the desiccation of cocoanuts, Government considered it desirable that the possibility of starting a factory should be further investigated. There is a considerable overseas' demand for desiccated cocoanut, but it is a very fluctuating one and in view of the fact that the industry has not been taken up by any of the enterprising firms on the West Coast who are engaged in the cocoanut oil and coir manufacturing industries and have already examined its potentialities, it is necessary to proceed with caution and before embarking on any scheme to be satisfied that there is a reasonable prospect of success. The desiccated cocoanut industry in Ceylon is highly developed although it is at present in a depressed condition after enjoying a period of prosperity. The information obtained from the Director of Agriculture, Ceylon, on the subject, was however inconclusive and the desirability of deputing an officer of the Department to study the conditions of the industry in Ceylon was under consideration at the close of the year.

Bombay University Reform.

By "Academicus".*

The Committee on University Reform appointed by the Government of Bombay in May 1924 have submitted their report in the form of a volume of nearly 300 pages. It deals comprehensively with the past and present constitution, composition and functions of the University and makes many interesting recommendations regarding its future.

The Committee was composed of the following gentlemen :—

Sir Chimanlal H. Setalvad, Kt. (*Chairman*), Dr. R.P. Paranjpye, The Reverend E. Blatter, Mr. M. R. Jayakar, Mr. H. P. Mody, Mr. K. Natarajan, Captain E. V. Sassoon, Professor K. T. Shah, Mirza Ali Mahomed Khan, Sir Purshottamdas Thakurdas, Kt., C.I.E., M.B.E., Sir Fazulbhoy Currimbhoy, Kt., Mr. A. B. Latthe, Mr. J. B. Petit, and Mr. A. L. Covernton (*Secretary*).

Mr. Mody resigned before the Committee sat owing to his departure from India and Captain Sir E. Victor Sassoon was prevented by other engagements from taking any part in the work of the Committee. Sir Purshottamdas Thakurdas and Dr. Paranjpye did not attend any meetings after the first month owing to other commitments.

The terms of reference were :—

(*a*) To enquire into the constitution and functions of the Bombay University with a view to broaden and liberalize its constitution and to effect its transformation into a teaching University, and to submit proposals for such modifications as may be considered necessary for these purposes.

(*b*) To investigate the relations between the University and its affiliated Colleges both in Bombay City and in the mofussil, and to consider whether it is desirable and feasible to institute other Universities at mofussil centres.

(*c*) To consider the relations which exist between the University and Government and to report whether any modifications are necessary.

(*d*) To consider the question of bringing the University into closer relation with the commercial and industrial interests and public bodies in the City of Bombay.

(*e*) To report on such other matters germane to the above general questions as may be considered necessary.

(*f*) The Committee is authorized to invite opinions from educational and commercial bodies as well as from the general public and to adopt such measures as it thinks fit for the taking of oral evidence.

The Committee held meetings on 95 days and issued a Questionnaire of fifty-four questions to 321 persons, institutions and associations. Written statements were received from 156 witnesses, of whom 58 were examined orally. The Committee appointed a Sub-Committee to report on the question of transferring the University and Colleges in Bombay to Salsette. The Sub-Committee's report is contained in Chapter IV of the main Report.

"The recommendations which the Committee have made will, if carried out", says the Report, "make the University immediately to undertake the great and important work of post-graduate teaching and bring the University in closer touch than hitherto with the industrial and commercial life of the Presidency, while at the same time imparting a greater width and depth to the range of studies represented by the several stages and branches of learning taught in the University or its affiliated colleges. This, it is hoped, will go a long way towards raising the standards of attainment in them to a level with those reached in the Universities of Europe and America. Our recommendations also provide for a more extended and thorough training in science and technology, which should greatly increase the vocational usefulness of the graduate of the Bombay University and fit him to take up without much further training responsible duties in the workshop and the factory, in positions which are at present filled by trained men from abroad. At the same time, the Committee strongly feel that their recommendations can achieve their object only if Government as well as other large employers of educated intelligence, fully realize their responsibility to accord the maximum encouragement to the graduates of the University by employing them, even at some initial loss of efficiency. The Committee trust that, with the closer association between the leaders of industries and commerce and the University, which is a main feature of their recommendations, there will result better mutual appreciation between employers and the graduates, who must look to the former in increasing measure for their own advancement as well as for opportunities of national service."

The Committee point out financial and practical difficulties inherent in the proposed transfer of the University to Salsette which it is suggested would deprive the University of that close relationship with the City of Bombay which must be maintained if the education

* Report on "Bombay University Reform". Government Book Depot, Poona. Price Rs. 1-14-0.

the University gives is to have a real value and vitalizing influence on the community.

"It cannot lay aside its affiliating function and responsibilities to the distant parts of the Presidency, but nevertheless it must always be also a city university", says the Report. "It must derive a considerable part of its educational power from the variety and complexity, energy and magnitude of the professional, industrial and commercial, municipal and governmental, social and economic, forces and machinery of the City of Bombay. Something of this intimate relationship and consequently something of the University's educational power, would be sacrificed by its transfer to a site fifteen to twenty miles from the heart of the City. In particular the University's power to undertake adult education would be obviously reduced if it were removed from the centre of the City, for the bulk of the class who would seek such education would be living within the island of Bombay"..... ....."If the only argument against a transfer of the University from its present site had been the sentimental objection made by Sir Claude Hill's Development Committee of 1914, we should not think it right that such a feeling should be allowed to stand in the way of a great scheme like this. But the objection, which is not without weight in itself, added to the weighty, practical and educational difficulties we have already mentioned and to the uncertainty of the financial aspect of the scheme, seemed to us to tip the balance decidedly against it, and we are unable to recommend its consideration."

The Committee suggest as an alternative a scheme for concentration round the present site of the University. They desire that as many of the existing colleges in the Island should be brought into such close neighbourhood to the University buildings as will render it easy to arrange a scheme of co-ordinated lectures and study that will economize lecturers and staff of both the University and Colleges, and make all teachers and students in Bombay realize that they are members of one corporation. The details of the concentration scheme are :—

(*i*) The University to acquire the buildings between itself and the Royal Institute of Science.

(*ii*) Government to transfer to University purposes the Sailors' Home.

(*iii*) Government to transfer to the University any portion of Museum site not required for Museum or other educational purpose.

(*iv*) The Oval Maidan be reserved as University sports ground.

(*v*) The Secretariat, when vacated by Government, to be converted into a college.

(*vi*) The Government Record Office, when vacated by Government, to be divided between Elphinstone College and Government Law School.

(*vii*) Watson's Hotel to be acquired for the Sydenham College.

(*viii*) Sites be reserved on the Cooperage or Reclamation within one mile of the University for the Mahomedan College and Wilson or St. Xavier's.

(*ix*) On the Cotton Green, Colaba, hostels be erected for Wilson, St. Xavier's, Sydenham Colleges, Post-graduate students, women students, Royal Institute of Science, and Mahomedan College.

(*x*) Drill Hall be erected on Colaba Cotton Green for the University Training Corps.

(*xi*) The Army and Navy Stores Buildings and Sassoon Mechanics Institute be reserved for University purposes.

After considering the general question whether there is need in the Presidency of one or more new Universities, the Committee have come to the conclusion that in the interests of the development of higher education new universities should be created in the principal natural divisions of the Presidency, namely, Maharashtra, Gujarat, the Karnatak and Sind when the conditions at their centres are ripe. There is no evidence of a demand for a new university at Dharwar. When there is sufficient evidence of demand for new universities at Ahmedabad and Karachi and financial support, the matter should be considered.

University at Poona.

Conditions are, however, ripe for setting up some form of university for the Maharashtra area at Poona. The Committee is unable to adopt any scheme for a unitary and residential university. Neither is it thought desirable to have a university combining constituent and affiliated colleges. An affiliating university is, therefore, recommended for Maharashtra especially because that would constitute a natural development of the parent university, would relieve Bombay of a large share of the responsibilities of higher education and would be representative of a homogeneous section of the Presidency. The medium of instruction and examinations in the new university must be English. The territorial limits will comprise the districts of East and West Khandesh, Nasik, Ahmednagar, Sholapur, Satara, Poona and Ratnagiri and the Indian States of Kolhapur, Sangli, Mudhol, Miraj, Akalkot, Jhamkhandi and Savantwadi.

The new Poona University, if it does not undertake Science, would require Rs. 17,50,000 for non-recurring expenses and would have to provide an annual income of Rs. 3,19,300 ; and if it does undertake Science, Rs. 27,50,000

non-recurring, and Rs. 3,79,300 or so recurring. The financial provision necessary for the institution at Poona of a university working on such a scale would be fifty lakhs. But the Committee suggest that the new university might be started if a capital sum of ten lakhs and an annual expenditure of 2½ lakhs are provided for. It is suggested that Government should give an annual grant of not less than one lakh of rupees to the proposed university.

Coming to the University of Bombay, the Committee consider that it cannot become a purely unitary university or even a unitary university for the Island of Bombay. It should undertake only post-graduate instruction and research. Such work should be undertaken and directed principally in Bombay but also at other suitable centres. In the opinion of the Committee the University should aim at creating and supplying the demand of the lower and upper middle class for a humanistic culture and especially a knowledge of politics and civics.

The Committee have also put forward a scheme for post-graduate instruction and suggest that research should be encouraged by means of the following measures :—

(1) The Mellon System of Industrial Fellowships.
(2) Research Fellowships.
(3) Grants in aid of the Publication of Research work.
(4) Occasional lectures.
(5) Developing University Library.
(6) A University Publication Department.

It is proposed that the University should create a new Faculty of Technology, and a College of Technology, for 200 students, to begin with, should be instituted in Bombay ; the Faculty of Technology should include Engineering (civil, mechanical and electrical), Agriculture and other technical and applied sciences : the subjects to be taught in a Technological College in Bombay should be Mechanical Engineering, Electrical Engineering, Textile Industries, and Applied Chemistry ; admission to be after the First Year's study in an Arts College : the course to be one of three years for a B. Tech. degree and a further two years for an M. Tech. ; the aim of every course to be clearly defined ; an advisory committee for each department : responsibility for students' practical training must devolve principally on the University.

The situation of the Royal Institute of Science is not suitable for a combination with the Institute of a full Technological College, teaching all the four departments.

Technological training should be divided between two institutions, an Applied Chemistry and perhaps, later on, Applied Physics Department attached to the Royal Institute of Science, and a College for Technological training in Engineering and Textile Industries to be opened at Matunga. The Technological College should be a university institution directly managed by the University. The Royal Institute of Science should conduct the Department of Applied Chemistry in co-operation and co-ordination with the University Technological College. The courses at the College and the Royal Institute of Science to be on the lines of those at the University of Manchester.

The cost of buildings and equipment at Matunga is estimated at Rs. 45,00,000 and of maintenance and staff at Rs. 3,50,000.

It is proposed that the university must for the present retain a Matriculation Examination framed to test proficiency in the essentials of an elementary culture, Languages, Mathematics, History, Geography and Science. It will continue to remain an external examination. The Committee makes special recommendations for devising a suitable curriculum of secondary education and suggest that the University must frame for itself a suitable qualification for entrance to the University. It should be the aim of the University, says the Committee, to take over the management of the Government Law College, the method of appointing the staff to which is held to be unsatisfactory.

A Faculty of Fine Arts is proposed to be instituted comprising the departments of (1) Painting, Drawing and Sculpture, (2) Architecture, (3) Music. All branches of the Sir J. J. School of Arts should be represented in the faculty.

The University should encourage the study and practice of European and Indian Music in schools and colleges : and appoint a committee of experts to investigate the part it should play in university education, the courses of instruction and the measures necessary to establish institutions for teaching European and Indian Music.

The Committee is of opinion that service in the *University Training Corps* should be compulsory : also that the University Training Corps ought to be gradually extended so as to be open to all who *wish* and are physically fit to join it.

As regards the constitution of the University the Committee observe :—

"The important alteration in the relations of University and Government which we have proposed is that the University and the public should have the right to determine the composition of some 75 per cent of the governing body of the University. We proposet o enlarge the Senate from 100 to 150 to make it more representative of the community and to make this body responsible for fundamental legislation and general supervision and control; but we think details of administrative or academic character should be formulated in ordinances and regulations issuing from the Syndicate and a new body, the Academic Council. By this means we propose to relieve the Syndicate of a great deal of business which it has neither time nor expert knowledge to manage."

The Committee make special recommendations in regard to women's education and the control and management of examinations, etc.

The proposals of the Committee involve a non-recurring charge of about Rs. 77,35,000 and a recurring charge of Rs. 13,81,000. It is suggested that contributions should be asked from the Municipal Corporation of Bombay and other bodies. Government should provide a sum of Rs. 30 lakhs to meet half the non-recurring expenditure and a recurring grant of Rs. 5 lakhs a year.

The report is signed by the following members :—

Sir Chimanlal Setalvad, Rev. Father E. Blatter, Sir Fazulbhoy Currimbhoy, Mr. M. R. Jayakar, Mr. A. B. Latthe, Mr. Mirza Ali Mahomed Khan, Mr. K. Natrajan, Mr. Jehangir Bomonjee Petit, Mr. K. T. Shah and Mr. A. L. Covernton.

Sir Fazulbhoy Currimbhoy and Messrs. Jayakar, Latthe, Mirza Ali Mahomed Khan, Natrajan and Shah have affixed separate notes.

Indian Farm Economics.

By N. N. Gangulee, D.Sc.*

That the economic situation may restrict agricultural progress may be adequately illustrated by the present position of British agriculture. With all the resources and strength of organization, if the British farmer finds himself drifting before the currents of the world's economic forces, consider the plight of the Indian peasantry.

As the basis of all successful agricultural effort lies in efficient organizations, we proceed to examine briefly some of the conditions under which the Indian peasant works. It is necessary to regard the farming industry as "business", taking cognizance of the fact that the essential economic factors operate freely on urban as well as on rural pursuits.

Our first consideration in farm economics must of necessity be the land as an economic unit. It is well known that in India the disastrous processes of sub-division and fragmentation of holdings have been going on at such a rate that agriculture is on the verge of bankruptcy. Those who constantly fix their gaze on Whitehall and Delhi for constitutional advances would do well to glance at the following observations.

Dr. Mann, in his economic survey of a village in the Bombay Presidency, found that in 1771 the average size of the holding was 44 acres, and by 1915 it had been reduced to 7 acres. Of the total number of holdings in the village, 81 per cent are now under 10 acres in size and 60 per cent under 5 acres. The extent of fragmentation may be realized from the fact that these holdings are split up into 729 separate plots, of which 463 are less than 1 acre and 112 less than ¼ acre. In a village in the Madras Presidency Dr. Slater found that in 1882 there were 112 holdings paying Rs. 10 and less in *kist*, but in 1916 the number rose as high as 366. My own investigation in Bengal confirms the existence of this disruptive tendency which is rapidly reducing a large proportion of agricultural land into uneconomic holdings.

Mr. Thompson, in Bengal, finds the size of the agricultural holding to be about 2.215 acres per cultivator, and according to the census of 1921 the average comes to 2¼ acres, and it must be remembered that these acres are very often divided into many fragments. Day by day the most disastrous consequences of this state of affairs on rural economy are making themselves felt. Knowing that for his livelihood he could not depend on such a small holding, the owner puts in very little effort to "better farming," and even if he did, its production could not have maintained his family. Thus, in the absence of any organized rural industries, chronic unemployment has

* Paper on "The Problem of Rural Life in India" read before the East India Association.

become one of the striking characteristics of Indian rural life. The Census Superintendent of Bengal says: "It is largely the land system of the country that is responsible for the present conditions. In other countries, where the holdings are comparatively large, and the farmer can only manage with his own hands a fraction of what work there is to be done, he employs hired labourers, and engages as many as are required to do the work, and no more. In Bengal the holdings have been so minutely sub-divided that there is not enough work for the cultivators; but, on the other hand, there is no other work to which they can turn their hand." In the Punjab Mr. Calvert has recently shown that the work done by the average cultivator does not represent more than 150 days of full labour in twelve months. Space will not permit me to analyze the situation in any detail, but it is clear that the time has come for decisive action. As the economic motive in Indian life is largely dominated by social customs and tradition, the representatives of the people brought into existence by the Indian reforms must realize that they cannot establish a twentieth-century form of government on fifth-century socio-economic organizations.

Turning to the second factor—that is, farm capital—we are confronted with the problem of the heavy indebtedness of the Indian peasantry. While the co-operative movement, instituted about fifteen years ago, has made considerable progress in this short time, the fact remains that the vast bulk of the agricultural population require to borrow even for the bare necessities of a primitive agricultural practice. From what I have seen in Bengal, I have an impression that the benefits of the co-operative movement do not reach the substratum of the peasantry. The fact that the necessary stimulus to the development of the movement has not come from those who love to designate themselves as "the natural leaders of the masses" appears to be significant. For that closely allied group known as the money-lending classes—consisting of zemindar, talukdar, lawyer, trader, village shopkeeper, priest, and numerous other associates—reap rich harvests of interest from the peasantry. By virtue of being in possession of liquid capital, and also by their place in the social organizations, they have a very strong grip on the rural masses. The commercialization of agriculture has made the position of the money-lending classes almost indispensable and hence more secure.

This brings us to the third factor in farm economics. The importance of better marketing facilities for agricultural products is such that any deficiency in the system is bound to retard agricultural progress. As the production is small and the means of transportation extremely inefficient, it is practically impossible for the grower to reach the market centres without the intervention of several middlemen. I may mention, in passing, that rural roads in India are unsatisfactory, and that the progress in this direction has been extremely inadequate. The total mileage of metalled and unmetalled roads in the British territory is about 216,000.

In considering the problem of marketing, we must bear in mind that, generally speaking, the greater portion of the prospective harvest is held in mortgage to the village trader. Once drawn into the vicious circle which surrounds the Indian markets, the cultivator cannot hope to receive the full benefits of the current prices. As an illustration, I beg to draw your attention to the following data collected by me in a market near Calcutta :—

Crop.	Price per 82 lbs. on a "Mortgaged" Crop.						Certain Date. "Free Crop."					
	Rs.	A.	to	Rs.	A.		Rs.	A.	to	Rs.	A.	
Jute ..	5	8	to	6	0		8	10	to	9	0	
Linseed ..	1	8	to	1	12		2	8	to	2	13	
Grain ..	4	8	to	5	0		6	12	to	7	0	

The disparity between the profits made by brokers and dealers and the prices the grower receives is so enormous that in the marketing centres all over the country "money-lenders congregate as flies over jam," and they are soon able to entangle the growers of the neighbourhood into permanent indebtedness.

Let us visualize a peasant bringing his crop to an "organized" market, such as Lyallpur. Having accepted the price dictated by the *ahrti* (commission agent), the seller has to pay *paledar* for emptying and filling bag, *toledar* for weighing, *chandar* for separating dust from the grain. He is also made to contribute a fixed charge for local charity and for the maintenance of *gausala* (cow hospital). This is not all. The *ahrti's* household must be satisfied; therefore he charges cash for his *langri* (cook) and *bhisti* (water-carrier), and the sweeper takes his share in kind out of the grain from the seller. Then, as regards the accuracy of weights and measures employed by the *ahrti*, Heaven alone knows how variable they are! The picture is not a bright one, and no industry can hold its own under such economic handicaps.

Ryots' Forests in Madras.

By "Son of the Soil".

In pursuance of the policy recommended by the Madras Forest Committee of 1912, forest panchayats for the management of minor forest reserves were first constituted in certain districts of Madras Presidency, in 1914. The working of these panchayats having proved to be not entirely satisfactory, Mr. D. G. Bles, I.C.S., was placed on special duty in 1920 to examine the progress made and to report what modifications of the system were required. As an outcome of this report, printed in G. O. No. 774, Development, dated 7th June 1922, the Madras Government decided to appoint a special staff consisting of a Forest Panchayat Officer and six panchayat inspectors for the improvement of existing panchayats and the formation of new ones working directly under the Chief Conservator and independently of the local officers of the Forest Department.

At the time of the appointment of the special staff in October 1922, 444.69 square miles of reserved forest were under panchayat management. The operations of the staff were confined mainly to the eleven districts of Kistna, Guntur, Cuddapah, Bellary, Chittoor, Chingleput, South Arcot, North Arcot, Trichinopoly, Salem, Coimbatore. By the end of 1924 the area had extended to 914⅛ square miles under the management of 466 forest panchayats. The progress reports of the Forest Panchayat Officer and the reports of Conservators of Forests indicate that the working of the majority of panchayats has been on the whole satisfactory.

In 1924 the Retrenchment Committee in dealing with the organization of the Forest Department recommended a general reclassification of reserved forests and the transfer of the control of what it termed 'ryots' forests' to the Land Revenue Department. In pursuance of these recommendations the Government directed that reserve forests should be reclassified as (*i*) Provincial remunerative, (*ii*) Provincial unremunerative and (*iii*) 'local' or 'ryots' forests' and placed Mr. T. A. Whitehead, Conservator of Forests, III Circle, on special duty to carry out the work of reclassification. In G. O. No. 703, Development, dated 12th May 1925, the Madras Government directed that the lists of forests as reclassified by Mr. Whitehead should be scrutinized by local committees consisting of the District Collector, a Forest Officer and not less than three non-officials. They have now passed orders on the question of the transfer of control of 'local' or 'ryots' forests' and of the forest panchayat staff to the Land Revenue Department.

The arrangement under which the Special Panchayat staff has hitherto worked directly under the Chief Conservator of Forests but independently of the local officers of the department was sanctioned as a temporary measure for a period of three years. Experience has shown that the disadvantage of the system is that neither the Chief Conservator nor Conservators can find time without detriment to their other duties to do an adequate amount of inspection or to exercise sufficient personal supervision over the development of the movement. The difficulty will be accentuated as the number of panchayats increases and the operations of the staff are extended to new districts. The area provisionally classified as 'local' forests is 4,186 square miles. Assuming an average area of two square miles for each panchayat the ultimate number of panchayats may exceed 2,000. On the ground that the number of panchayats will shortly be unmanageable by the Chief Conservator, the Madras Government consider that some new arrangement is necessary.

In recommending the transfer of control of forest panchayats to the Revenue Department, the main argument put forward by the Chief Conservator and accepted by the Retrenchment Committee was that the trained forest staff should be employed in the development of the valuable State timber forests and that it was false economy to dissipate its energies on minor fuel and grazing reserves the management of which requires no special technical knowledge. The Madras Government in their Order No. 758, Development, dated 12th April 1924, have accepted the principle that reserves which are useful for the supply of the ordinary every-day needs of the ryot population should be handed over to panchayat management, if panchayats can be formed to work them satisfactorily. The most suitable agency for the control of panchayats is the department which is in closest touch with the ryot population and this, from the nature of its duties, is the Land Revenue Department. The Madras Government, therefore, consider

that both in the interest of Forest administration and of the development of the panchayat system, the control of the panchayat staff and of the reserves now under panchayat management should be transferred to the Land Revenue Department with effect from July 1st and that as and when new panchayats are formed all 'local' forests should automatically pass from the control of the Forest Department.

The Special Forest Panchayat staff are to work under the direct supervision of the Board of Revenue, which will allot panchayat inspectors, hereafter to be styled Special Deputy Tahsildars, to each district in which forest panchayats are working. The Forest Panchayat Officer will be attached to the office of the Board of Revenue but when working in any district will function as the Collector's Personal Assistant for forest panchayat matters. Special Deputy Tahsildars will be subordinate to District Collectors who will have power to depute men as necessary from the approved list of Deputy Tahsildars for the district.

Collectors are to submit all new panchayat agreements for the sanction of the Board but will have authority to renew old agreements. They are to exercise direct control over panchayats but will delegate to Revenue Divisional Officers such inspections and local inquiries as they may think fit. Revenue Divisional Officers will be expected to inspect panchayats during their tours and to submit reports on their working but will have no power to pass orders. Collectors will be empowered to suspend unsatisfactory panchayats but the cancellation of agreements will rest with the Board. Reserves withdrawn from panchayat management will not revert to the Forest department but will be in the charge of the Revenue Department. Special Deputy Tahsildars will submit fortnightly diaries in duplicate, one to the Collector and the other to the Forest Panchayat Officer. The Board will submit quarterly progress reports for the information of the Government similar to the reports at present submitted to the Chief Conservator.

The Chief Conservator will advise the Board on technical questions and will, if required, arrange for professional assistance to District Collectors. In selecting new areas for the formation of panchayats the Board should, it is directed, consult the Chief Conservator, so that timely arrangements may be made for the redistribution of the forest staff to be redrawn. Preferably work should proceed in districts which contain a preponderance of 'local' forests to facilitate the abolition of forest divisions and ranges.

Britain's Coal Industry.

According to the evidence given before the Court of Inquiry appointed by the Government to investigate the causes and circumstances of the present coal dispute in Britain, a sum of approximately between £60 and £70 millions of new private capital has since 1913 been invested in the industry, a large part of which has reached the productive stage, the output of coal obtained by coal-cutting machines and the horse power of electric motors in use has more than doubled, and the number of conveyors in use has more than trebled. The owners claim, however, that in spite of these outlays, the increase in the cost of production has been altogether disproportionate to the pre-war rate of increase, even after allowing for the alteration in commodity prices generally, and they attribute this increase largely to the reduction in the working hours. Among the economic causes that have contributed to the present position of the industry are the diminished consumption of coal by the iron and steel industry, the diminished world consumption of coal compared with that of 1913, the increased consumption of oil and hydro-electric energy for industrial purposes, the development of foreign coalfields, the contraction in the world volume of trade, and the lower costs of production of, and, therefore, the lower prices asked for, some of the coals with which the British product competes in oversea markets. In regard to profits, the effect of the national minimum wage has been to prevent the division of the proceeds of the industry on the anticipated basis that the owners would receive a fixed ratio of 15 per cent of the amount distributed in wages. In the twelve months ending last April, the ratio received by profits was nominally a little over 2 per cent, namely, £3,360,860, compared with a wages bill of £1,40,442,529, but that credit balance of £3,360,860 is exclusive of various expenses estimated at about 3*d*. per ton and not included as costs of production for the purposes of wages ascertainment. If account be taken of these expenses, the commercial profit in the twelve months ending last April represented only about 66*d*. per ton.

Industries of the Baroda State.

By Christopher Hay, M.A.

The Annual Report of the Department of Commerce and Industry of the Baroda State for the year ending the 31st July, 1924, is, as usual, full of interest. Out of the five mills that were under construction during the last year, three have actually commenced work. The opening ceremony of the Kadi Laxmi Cotton Mills was performed by Sheth Hararwala of Sidhpur on 31st March, 1924, while the Sidhpur Mills were formally declared open at the beginning of the current year. The New Baroda Mills, under the efficient management of Messrs. Zaverchand Laxmichand Brothers & Co. have commenced the working during the year under report, and it has a very bright future before it. All these Mills are Spinning Mills and have added 45,000 spindles to the Textile Industry of the State. The Agents of the Kalol Cotton Mills, Limited, are erecting a Spinning Shed by adding 10,000 spindles in addition to their Weaving shed. The Kalol Spinning and Weaving Mill is still under construction. The construction work of the Billimora Khatau Mill is now completely over, but the Agents have not been able to take delivery of the machinery and equip the same through paucity of sufficient funds. However, it is hoped the Mill would be in a working condition during the course of the current year. It is gratifying to note that of the new Mills that have started work, the two Petlad Spinning Mills are the first to declare dividends.

Chemical Industries.

The Modern Chemical Works, for which working capital was provided last year, contiues to manufacture Sulphuric and other allied Acids, and it is thought that the removal of the heavy Import Duty on Sulphur would afford the concern an opportunity to work on a profitable basis. Besides, Dr. Naik's services were made available to the concern in advising them on technical matters. But it is to be regretted that the concern is not able to make both ends meet owing to the ruinous competition. Unless, therefore, the prospects improve and the management becomes more efficient, Modern Chemical Works have little chance of working successfully.

The concessionaires of Dwarka and Kodinar lkali projects have not been able so far to unch their schemes into operation, and it is feared under the present financial stringency the schemes are not likely to materialize in the near future.

Pottery and Cement Industries.

The Dwarka Cement Company manufactured during the year 1923, 25,422 tons of cement and has paid Government during the period Rs. 4,766-10-7 as royalty. The factory is not as yet working to its full capacity ; and though prospects for Cement industry are very bright, the Company is not able to run the factory on a profit-earning basis owing partly to the absence of adequate working capital and the efficient and economical management.

The project of the Kodinar Cement Works has not materialized as yet.

The Ransipur China Clay Works have not been started, but there is every possibility of completing the preliminary arrangements during the current year.

New Industries.

Owing to the unfavourable conditions of trade as detailed above, no large company was promoted during the period, but the year was not altogether barren of results. Three Ginning factories at Dabhoi and one Ginning factory and a Cotton Press at Vyara and Ginning factories at Amroli and Tankhala, one Cotton Press at Bodeli were promoted during the year. A small Brass Utensil Press factory at Visnagar has also been started.

The Bone Mill that has been recently started at Baroda deserves, however, special mention. It is a unique factory of its own kind on this side, and now freed from the terminal tax, it should be capable of producing good manures besides Bone meal.

Shree Ghanshyam Pharmacy, Limited, also started its operation during the year. It manufactures Ayurvedic medicines on a large scale, and considering the keen interest created among the public as to the efficacy of the Ayurvedic medicines prepared under the expert directions, the concern has an assured prosperity before it.

Cinema Industry.

With the growth of the Cinema Film Industry in India, the importance of Baroda with its palatial buildings, extensive parks and other facilities is being gradually realized by the Cinema Film producing concerns of Bombay and other places. In other words, all the essential facilities for film taking are available here ; and during the year under report such

facilities were made available to the Saraswati Film Company, the Swastika Film Company and to the Asoka Cinema Pictures, all of Bombay, in the production of their photo-plays. The Eastern Film Company, recently started at Baroda for producing Cinema films and photo-plays, was also helped in this respect.

Fish Canning at Velan.

As a result of the successful fish canning experiments carried on by this Department at Velan, a party expressed his willingness to start a small Canning Factory at Velan provided the services of Mr. Dotivala were made available to him during the initial period of the factory. As, however, Mr. Dotivala proceeded to London as a State scholar, no progress could be made in this behalf.

Button Industry.

A series of experiments were made with Tadpalm nuts growing in our forests by Mr. I. Mustafi, late Button Expert, Bombay Government, with a view to manufacturing solid buttons from them. The results have been successful, and very fine buttons have been prepared out of the palm nuts. Efforts are being made to ascertain the available quantity of the nuts and induce some one to start button manufacture as a Cottage Industry.

Match Industry.

Investigations were undertaken to find out whether some trees in our forests would supply us suitable veneer and splints for matches. Successful demonstration of the match-making machinery at the recent Baroda Industrial Exhibition has proved that some of the forest trees could be successfully utilized for the above purpose. Efforts, therefore, of introducing match-making as a Cottage Industry in the Songadh and Vyara Talukas are being made.

Further Protection to Steel Industry.

The Report of the Indian Tariff Board regarding the grant of supplementary protection to the Steel Industry (Part I) has been issued. The first part of the Board's Report, which is published in advance of the complete Report, deals with the supplementary protection to Rolled Steel during the period in which the Steel Industry (Protection) Act remains in force and contains the following recommendations:—"Our recommendation is that a bounty should be paid on steel manufactured in India between the 1st October, 1925, and the 31st March, 1927, subject to the following conditions:—

(1) The bounty should be paid only to firms or companies manufacturing mainly from pig iron made in India from Indian ores, steel ingots suitable for rolling or forging into any of the kinds of steel articles specified in Part VII of Schedule II to the Indian Tariff Act, 1894.

(2) The bounty should be paid on steel ingots manufactured by such firms or companies, and the bounty should be paid at the rate of Rs. 18 a ton on 70 per cent of the total weight of the ingots manufactured in each month.

(3) The total amount of the bounty payable under this Resolution in the eighteen months ending 31st March, 1927, should not exceed Rs. 90 lakhs.

Except in respect of the period, the amount payable per ton and the limit on the total payments, these conditions are identical with those contained in the Resolution of the Legislative Assembly, passed on the 26th January, 1925, by which an additional bounty was sanctioned for twelve months up to the 30th September, 1925. The system, by which the bounty is paid on 70 per cent of the ingot production, seems to have worked smoothly, and we find no reason for suggesting any change in this respect. If, as we propose, the rate per ton is fixed at Rs. 18 and the limit to the total payments at Rs. 90 lakhs, the effect will be that the full bounty can be earned by an ingot production of 714,000 tons which is equivalent to 500,000 tons of finished steel. The risk that the output of 'bounty' steel may be less than the estimate is, we think, sufficiently safeguarded." The Board estimate that the bounty on Rails and Fishplates to which Government is already committed, together with the bounty now recommended, will involve a payment of Rs. 256 lakhs between April, 1924, and March, 1927, and that the increase in revenue from protective duties will be Rs. 280 lakhs. The bounty proposed, therefore, leaves a margin of Rs. 24 lakhs. The Board do not recommend that the import duties on Rolled Steel should be increased.

[Since the issuing of the Report, the Indian Legislative Assembly has sanctioned the Protection proposed.—Ed., *M. E. J.*]

Life Assurance without Medical Examination.

B. B. Mitha writes in the *Calcutta Commercial Gazette* a suggestive article under the above heading, from which we take the following :— It is the common practice now-a-days of Life Offices to examine a life proposer by a competent medical man before the acceptance of his proposal. Much weight is bestowed on the value of Medical Examination when selecting a life proposal, but experience tells us that the medical opinion differs when the same proposer is examined by different medical men. It is not uncommon to find that a life proposal refused by one office to accept at ordinary rate has been accepted by another office on the recommendation of medical examiner.

The statements made by the proposer regarding his family history and personal history and the declaration made by him are the fundamental things to be considered and the policy contract is made on the basis of these statements and declaration. Now the conviction is that if these statements referred to above are not at all unfavourable, there ought not to be any objection on the part of a life office to accept the life proposal without undergoing the process of medical examination.

But questions may be raised that if the abolition of medical examination be re-introduced as of the pre-actuarial age, then the proposer who knows or believes himself to be a bad life will have his chance to defraud life office. To prevent this fraud a scheme is to be so formulated that it may meet half-way, namely, to offer a chance of effecting a life policy to those who are prevented to do so for certain difficulties of medical examination, and also to have a safeguard for the life office which is ready to meet as nearly as possible the individual requirement of the proposer. The scheme of life policy without medical examination is meant for that section of the public who are not at all bad lives themselves but have some plausible reasons not to undergo medical examination and at the same time are in need of the benefit of life policy.

Another question may be raised that the rates of assurance without medical examination should necessarily be higher than the rates of assurance with medical examination and therefore no one will be willing to pay that extra rate. So extra rates will put hindrance to those who are to get life policy without medical examination. To meet the abovementioned objections the scheme is to be so formulated that the value of medical examination is not altogether ignored. It is a common knowledge to the insurance men and which is testified by experts that the effect of medical selection wears off usually after three, and utmost after five, years from the date of selection.

In order to give the benefit of life policy to those who are for some reasons unable to undergo medical examination a life office may allow a policy of moderate amount and under endowment plan with or without profits. The scheme stated below, we believe, will meet the requirements :—

1. That the amount of policy under without medical examination scheme, must not exceed Rs. 2,000.

2. The plan of assurance would be endowment of single payment or 10 or 15 payments. No whole life policy will be issued under this scheme. The policy will be issued on the following conditions, namely, that :—

(*a*) If death occurs within the first twelve months from the date of the risk taken, no benefit will accrue ; the whole premium paid shall be returned.

(*b*) If death occurs after twelve months from the date of the risk taken and before the end of twenty-four months, one-fifth of the sum assured or the amount of the premium (if by single payment) whichever is greater is payable.

(*c*) If death occurs after twenty-four months from the date of the risk taken and before the end of thirty-six months, two-fifth of the sum assured or the amount of the premium whichever is greater is payable.

(*d*) If death occurs after thirty-six months from the date of the risk taken and before the end of forty-eight months, three-fifth of the sum assured or the amount of premium whichever is greater is payable.

(*e*) If death occurs after forty-eight months from the date of the risk taken and before the end of sixty months, four-fifth of the sum assured is payable.

(*f*) If death occurs after sixty months from the date of the risk taken, the full benefit is to accrue.

3. The statement regarding the family history of the proposer and his personal history and the declaration made by him shall be verified either by his nearest relatives or by his usual medical attendants or by an affidavit to be made before a competent court.

Notes from U. S. A.

Growing World Demand for American Electrical Equipment.

New York, 1st July, 1925.—Exportation of $70,000,000 worth of electrical machinery and apparatus in the fiscal year 1924 against $25,000,000 in 1914 and $10,000,000 in 1904, illustrates the rapid increase in world use of American electrical apparatus of every-day requirements of man the world over. American electric fans are buzzing in the tropics the world around; American cooking and heating devices are minimizing the duties of the home from the equator to the arctics; American lamps are lighting the cities and villages and homes in the most distant countries and colonies of the world, and American motor driven household devices are lightening the cares of the housewife from the Occident to the Orient and from the far north to the most distant south.

Just a few illustrations, says the Trade Record of The National City Bank of New York, will show the extent to which the world is giving recognition to the ingenuity of the American inventor and the integrity of the American manufacturer. Take the electric fan for example: There was sold nearly a million dollars worth of them to other lands in the fiscal year 1924. Electrical cooking and heating apparatus are also in demand in the households the world over, and the latest record indicates that a million dollars worth were exported in the year 1924, going to seventy different countries extending the world over. The 5½ million electric lamps exported light cities and villages and homes in not only all the grand divisions but in the smallest and most distant islands of the Pacific and Indian Oceans.

Of course the demand for radio and wireless apparatus comes in increasing intensity and from every country of the globe, and the $4,000,000 worth sent out of the country in the fiscal year 1924 went to sixty countries. The doctors the world around are showing their appreciation of American therapeutic apparatus and took a million dollars worth of X-ray machines in the fiscal year 1924.

Feeding 150,000,000 People.

Statisticians have estimated that the population of the United States, by its natural increase alone and without any addition from immigration, will amount to 150,000,000 people shortly after 1950. If there is any large immigration in the next quarter of a century, the 150,000,000 mark may be reached even earlier, although the influence of immigration on population is obscure because immigration apparently retards the increase of native population. But since in any case the United States is headed for a population of 150,000,000 probably within thirty years, economists in the Department of Agriculture have attempted to estimate roughly what crop and pasture and forest land will be required to support such a population.

They calculate that, if consumption remains on the same per capita basis and production per acre is not increased, considerably more land will be needed than is available. This conclusion, however, need cause no alarm because consumption habits will certainly undergo some change, and the average yield per acre of crop and pasture land will undoubtedly be increased. Assuming that some modifications will be made in consumption habits and production methods, it is figured that only about 38,000,000 acres need be added to the present actual crop land of the United States to support 150,000,000 persons.

That addition would suffice for domestic consumption, moreover, and still leave half the present acreage to devote to production for export. The United States is especially adapted to the production of certain crops needed by the rest of the world, particularly cotton. It is not likely that it will go out of the production of these crops for export until the pressure of population on land resources becomes much greater than it is likely to be within the next few decades. It is estimated that at least half the acreage (including the acreage required for work stock) now employed in the production of export goods will continue to be devoted to that purpose. Allowing for that probability, the experts in the Department of Agriculture figure that the total area of land needed to sustain a population of 150,000,000 with no greater relative dependence on imports than exists now would be 403 million acres. An addition of a little more than a million acres a year until 1955 would bring United States crop land acreage up to that point.

Some changes in consumption would be necessary to make this area suffice. In food consumption it is thought the principal change would be in the use of livestock products,

Consumption of cereals and dairy products probably would not decrease materially. A very large decrease is reckoned on in the consumption of forest products. How big a cut would be required in this respect would depend largely on the measures taken for reforestation. The present forest area of 483 million acres will still be available for growing timber if Americans can succeed in developing an adequate policy of reforestation. On the present forest area, say the department experts, it would be possible, by methods not very costly, to grow annually by 1950 about ten billion cubic feet of lumber. With that supply consumption of forest products could still be maintained in the United States at double the present per capita consumption of Germany and France. On the other hand, consumption of forest products even at that rate is only one-third of the present per capita consumption.

Along with these changes in consumption there would have to be important gains in the productivity of all kinds of crop land. Such gains, the department declares, are feasible. The proper selection of the thirty-eight million acres of additional land that will be needed for crops in the next few decades is one of the most important problems confronting American agriculture. There are available a little more than 600,000,000 acres of potential crop land from which to choose the additional 38,000,000 acres of crop land estimated to be required for a population of 150,000,000. Allowing for an area of forest land equal to the present forest area, there remains nearly 400,000,000 acres of potential crop land. But nearly all this is of poor quality and requires clearing, drainage, irrigation, fertilization, or employment of dry farming methods.

In the forested regions of the eastern half of the country it is estimated there are at least 220,000,000 acres capable of use for crops without drainage or irrigation. Much of this land, however, while not absolutely too rough for use in crops is quite rolling, but it should be possible, by careful selection to get much of the required new crop acreage either from the heavy land of the cut-over region, from the best of the 162,000,000 acres of available medium-textured soils, or from land suitable for dry farming. These possibilities, the department believes, should make it unnecessary to reclaim a very large area by drainage or irrigation in the next few decades, and only projects should be selected for this purpose which are unquestionably capable of economical development.

Supporting a Much Larger Population.

Available land resources in the United States are probably capable of sustaining a population of 300,000,000 with no greater relative dependence on outside sources of food and raw materials than exists to-day, say experts in the United States Department of Agriculture who have been working on problems of land utilization. But a population of that size would have to go on a very different standard of living than the present population enjoys, and it would also have to maintain its productivity of farm and forest land at a considerably higher level. This conclusion has been reached on the basis of a careful study of standards of living in western European countries, particularly Germany and Great Britain, all the facts taken for the study being based on pre-war conditions. Taken along with European standards of efficiency in land utilization, the study indicates the direction in which the United States will have to travel if it is to support a constantly growing population without excessive dependence on foreign food resources.

Very considerable changes in consumption habits would be necessary to make United States land resources suffice for 300,000,000 people. This is particularly true of forest products. There would have to be a big reduction in the consumption of animal products. At the same time a large increase in the productivity of the land would have to be brought about. It is estimated by the department's economists, in fact, that it would be necessary to increase the average yield of crop land by nearly fifty per cent and to double the return from pasture and forest land. The experience of certain European countries shows this to be possible. Besides the land now in farms, there are in the United States about 600,000,000 acres more land physically capable of being used for crops, although much of it is of low productivity and would require expensive reclamation. Some of this land, however, would have to be kept for pasture, so that a right relationship would be maintained between crop and pasture land. In addition, there would remain about 470,000,000 acres of semi-arid land capable of use only for pasture, and about 270 million acres of humid land too rough for crops and probably best adapted for forests, with perhaps incidental grazing.

The Fish Crop of the World.

Estimates of the value of the fish "landed" in the principal countries of the world supplied

by the United States Fish Commission to the Trade Record of the National City Bank of New York put the world's total at the latest available date at approximately $780,000,000 per annum. A recent tabulation by the Fish Commission gives the total value to the fishermen of the fish landed in Japan at $89,000,000, United States at $86,000,000, France $85 millions, Spain, $72,000,000, England and Wales $65,000,000, Russia $50,000,000, Portugal $37,000,000, Greece $28,000,000, Canada $28,000,000, Sweden $23,000,000, Scotland $19,000,000, Denmark $15,000,000, Norway $14,000,000, Germany $11,000,000, and Netherlands $11,000,000.

The quantity and value of the food supplied by the waters of the world has greatly increased with the advent of modern methods. Capital now gives close attention to the taking of the fish as well as their preservation and marketing. The capital invested in the United States, exclusive of Alaska, in the mere taking of fish has advanced from $38,000,000 in 1908 to $60,000,000, and the value of the fish landed increased in the same period from $54,000,000 to $76,000,000, although the number of persons actually employed in the fish industry during those years fell from 141,000 in 1908 to 115,000. Estimates for other parts of the world show a like increase in the value of the outturn and the use of capital.

The chief processes now utilized in the taking of fish as an industry include the steam "trawler" which drags behind it a huge scoop net with a mouth more than 100 feet in breadth; lines several miles in length and carrying several thousand hooks each, and the big purse nets and seines.

Most of the fish landed annually by the fishermen of the world is the product of the oceans, even in the United States, which with its lakes and rivers has a larger supply of fresh water than most other countries. A very large part of the world's fish crop is taken at comparatively shallow places adjacent to the shores of the continents, and usually designated as "banks", the Newfoundland banks, the banks of the North Sea and those adjacent to Japan. These comparatively shallow places or "banks" are the favourite feeding ground of fish coming often from great distances and furnish a large part of the fish taken for market, though the classes of fish which seek the shores and fresh waters for spawning purposes also contribute large quantities of this steadily increasing food harvest of the world.

Gas Revives the Gassed.

Prof. Yandell Henderson, of Yale University, has devised a method whereby carbon dioxide, which is always present in exhaled breath, is regularly and successfully used to start breathing in persons who, as the result of suffocation or other cause, have ceased to breathe. The reason that carbon dioxide gas stimulates breathing in asphyxiated persons, in spite of the fact that they may have been suffocated by too much of the same gas, is that carbon dioxide in the lungs and blood is normally necessary to stimulate the nervous centres which control respiration. If a person who has been partly suffocated is given pure oxygen to breathe, or even fresh air, they not infrequently cease to breathe at all, due to the fact that pure oxygen in the lungs depresses the breathing nerve centres. The reason why people breathe heavily after exertion is because the exercise has burned more bodily fuel, and carbon dioxide, the "smoke" of the bodily fires has accumulated in the system.

So Professor Henderson and his associate, Dr. H. W. Haggard, have devised a breathing apparatus which automatically feeds about five per cent of carbon dioxide to the patient. This stimulates deep breathing and enables him to get rid of such really poisonous gases as carbon monoxide which may have caused his collapse. Patients who have been treated in this way, instead of suffering for several days from severe headaches, are perfectly well in a few hours, and firemen who have been revived at fires are able to get up immediately and go on with their battle. The method is also used after anæsthesia and generally in all classes of respiratory failure.

Sugar Beet.

The area planted with sugar beets in the United States of America this season is smaller than last year. The United States Department of Agriculture estimates the area at 776,000 acres against 814,000 acres last year. Should the sugar yield average the same as last year, the production in 1925-26 would be about 802,584 tons of refined sugar as compared with the actual outturn of 973,214 tons in 1924-25. The low price of sugar in the early part of the present season and a rise in prices of other farm products, as also the extremely dry weather that prevailed in many of the beet-growing States in last autumn and the subsequent lack of moisture at planting time, were the factors responsible for reduction in acreage under beets.

Canadian Trade and Finance.

Benefits of Preference.

Montreal, August 1st, 1925.—The trade relationship between Canada and the British West Indies constitutes a clear example of successful concerted effort toward making Imperial Unity a tangible reality. Under the Canada-West Indies Trade Agreement of 1913 certain of the southern colonies of Great Britain granted a preference of 20% to Canada on a specified list of articles. By the agreement in 1920, all the British Colonies of the West Indies as well as British Guiana and British Honduras granted a preference ranging from 10 to 50 per cent of the duties imposed. The preference applied to all Canadian products except a few articles specially provided for. Canada reciprocated by giving to most West Indian products a preference of 50 per cent of the duties imposed by the Canadian general tariff schedule.

This mutual agreement had a distinct success. Canadian products and the products of the West Indies are entirely non-competitive. We need their sugar, cocoa and spices. They need our flour, meat, fish and manufactured products. From these countries Canada bought commodities to the value of 10 million dollars in 1913. By 1924 the annual purchases had risen to a value of twenty-two million dollars, while our sales had grown from a value of five million dollars to a value of thirteen million dollars during the same period. In the Conference of 1920, Barbados, British Guiana, Trinidad and Tobago agreed to make the rate on Canadian goods not more than 50% of the rate in their general tariff. British Honduras and the Leeward and Windward Islands made the Canadian rate not more than 66⅔% of their general rate, while the Bahamas and Jamaica made their rate for Canadian goods not more than seventy-five per cent of the general rate.

In the Conference this year it was not necessary for Canada to make many new tariff concessions because the former flat rate was quite satisfactory to the islands. While the new concessions granted by the islands do not include any substantial change in their general rates, yet the preferences granted on many specific articles are so generous as to give Canada virtual control of the market, so far as Canada's most important products are concerned. Perhaps the most important arrangements are those concerning transportation and sugar.

Under the terms of the Treaty all those represented decided to reciprocate in granting preference on important products and to co-operate in subsidizing transportation facilities which will permit the growth of a substantially increased volume of trade. The Jamaicans expect to buy one million dollars a year more Canadian flour than in the past. All kinds of meat, including canned goods, salted and dried fish, dairy products, potatoes and apples, which are in great demand in the Islands, will come from Canada. Practically the whole West Indian sugar export is expected to come to Canada. The smaller islands will be greatly benefited by the preference on limes and spices. The Jamaicans in the party were particularly enthused over the banana clauses, because they feel that this Treaty will permit the independent growth of this industry. In all parts of Canada the delegates were received with an enthusiasm and good cheer which evidenced Canada's desire to do her share towards bringing success to the relationship. It cannot be too often emphasized that visits and conferences of this kind do a great deal to smooth out misunderstandings and to promote mutual understanding. Certainly this spirit of far-reaching co-operation has resulted in an agreement which must be beneficial to all parties and which will tend to serve as a suggestion for future discussions and agreements in other parts of the Empire.

Wheat.

In any careful consideration of the available sources of accurate financial and commercial information, mention must be made of the recent development of research at the great universities. The *Harvard Economic Service* is the most outstanding development in this field. At the present moment, the "Papers on the World's Wheat Crop" by Harold S. Patton of the Department of Extension, University of Alberta and the "Wheat Studies of the Food Research Institute," Leland Stanford University, seem particularly timely, while the forthcoming report on "Canada as a Producer and Exporter of Wheat" from the latter source should be of unusual interest to all Canadians.

Supply of agricultural products, not demand, is generally supposed to be the troublesome factor in the price equation; acreage and crop

condition reports are sought with eagerness since these are the sources from which price predicting information may be gleaned. Yet careful consideration of recent price movements in the wheat market suggests that the real source of uncertainty this spring has been the lack of satisfactory estimates concerning Europe's potential buying power. The factor which makes this situation the more interesting is that while we possess comparatively accurate statistics concerning the wheat growing capacity of each part of the world, we lack even approximate guesses concerning the future buying power or consumptive capacity of large populations who are now beginning to buy wheat.

The course of wheat prices during the last year furnishes an excellent illustration of the need of the study of the purchasing power and its effect upon demand. From early in the season the crop forecasts of Broomhall, The United States Department of Agriculture and others were comparatively constant. But no one was able to estimate the amount which Europe or Russia could afford to spend for wheat, nor the quantity needed. When large foreign orders were rumoured people quickly overestimated foreign requirements. Prices rushed to unjustifiable heights and then when such prices had produced a reduction in orders, pessimism carried prices too low.

The chart on the subject shows the course of Winnipeg prices during the period. Starting with a low of $1.25 last August, the price rose until the first of January when it stood at $1.80. This 55 cent rise occupied four months and amply discounted all the news concerning size of crop. In the next three weeks the price rose another 36 cents to a peak of $2.16. Within two weeks more there was a drop to $1.90, and before the end of March a break to below $1.50. While part of this spectacular cycle was undoubtedly due to some shortage and to speculative fever, it was the uncertainty of demand which disturbed even the most careful speculators. "Wheat Studies" summarizes the situation as follows:—

"It is clear that since last November there have been no changes in the statistical position, or in the evidence concerning the fundamental facts of supply and demand for the crop year, sufficient to account for either the rise or the decline in prices. The simple fact is, the situation was so unprecedented that there existed no sound basis upon which to estimate the normal level of wheat prices for the season. It must be remembered, however, that prices are strongly influenced not only by actualities but also by appraisals of future probabilities made and acted upon by traders in the market. Hence a consideration of the psychological factors at work, and in particular of the influence of speculation, is needed for an understanding of market movements in the recent period.

"The situation during this crop year has been unique in many ways. The bumper crop of 1923 was succeeded in 1924 by a short crop of poor average quality and abnormal geographical distribution. Furthermore, the extent of the buying power of war-stricken Europe remained undefined and the restorative power of the Dawes Agreement was impossible to evaluate. The diet of Europe seriously disrupted during the war, had not yet returned to normal. Lack of free international movement of gold and the presence of fluctuating currencies at abnormal valuations have been further complicating factors. Under these circumstances, despite general agreement on the gross quantitative statistical position, faced with a complex situation whose numerous individual factors were not susceptible of direct market analysis, traders have been of widely divergent opinions with regard to the price outlook and have registered these divergent views in their market activities."

Because of this uncertainty concerning world purchasing power, it is interesting to examine the history of wheat prices during the last century. In 1800 England was largely self-sufficient so far as wheat supply was concerned, but during the Napoleonic wars the price was temporarily raised to nearly $3.80 per bushel. The reduction in price after the war injured the landowners and the agricultural group in England. For a time English landowners secured a protective duty on wheat, eventually giving some preference to that which came from the Dominions, but the manufacturers who wished to secure cheap food for their employees gradually secured reduction in tariff, until free importation began in 1849.

During the period which followed came the expansion of the American supply, the cheapening of transportation, due to steam, and the invention and large-scale production of agricultural machinery. In 1867 America produced 200 million bushels of wheat, seven years later 300 million bushels, four years later 400 million bushels, and in 1891, 700 million bushels. Not only was the supply from America increasing, but during the thirty years after 1870 wheat began to pour in from the Danube Region of Russia, from India, Asia and Australia until in 1894, the year of the greatest oversupply, wheat fell to 65 cents a bushel. Of course such a reduction in price produced a greatly increased per capita consumption during the century, but neither population increase nor larger consumption could at first keep up with such startling increases in supply.

In the next few years the increases in population in the United States cut off the proportion

available for export. The table below indicates the normal sources from which Great Britain, the leading importing country, received wheat before the war. At that time the surplus of Russia and India were substantial. During the war an abnormal amount was obtained from the United States owing to reduced consumption and stimulated production, while the Russian and Indian surplus was cut to a minimum.

Source of British Wheat and Flour Imports.

	Pre-War 1904-13 Per Cent	War-Time 1914-18 Per Cent
Russia	14.0	1.6
Other European Countries ..	1.2	..
U. S. and Canada	38.7	76.6
Argentina	17.6	8.3
India	15.5	6.3
Australia	9.6	6.1
Other Countries	3.4	1.1
	100.0	100.0

The time elapsed since the war has only been sufficient to permit one to gain a partial view of the new balance in the world wheat market. Certainly the United States can no longer be considered a consistent source for a two hundred million bushel surplus. For instance, forecasts for 1925-26 indicate that the United States crop will be only slightly larger than her consumption. While European production is expected to be more satisfactory, yet Great Britain alone will require something over two hundred million bushels. The five years 1920-24 have found the export countries with an average surplus of seven hundred million bushels, and this figure is a rough measure of the import requirements of the rest of the world. While for the next few years Argentina may supply one hundred and fifty million bushels, Australia one hundred million, and India and Russia fifty million bushels, this leaves about four hundred million bushels needed from North America. With the United States supplying not more than one hundred million bushels, Canada will be called on for the balance. Yet even this statement does not give the whole picture of the world's need for Canada's wheat supply. It is as yet impossible to predict the extent to which the industrialization of Japan will increase her wheat consumption, but we know that a relative increase in purchasing power with its changed standard of living is quickly felt in the wheat market. Such an increase is also taking place in China, India and South America. Peasant ownership of land in Russia will at least mean prolonged reduced production, and it may mean greatly increased home consumption. These conditions present a strong probability that during the next few years production will continue on a profitable basis unless prices become so attractive that land, which should be used for other purposes, will be devoted to wheat and renewed overproduction result. In reality the long-time problem presents itself as one of fairly rapid increase in demand, due to this increasing market with comparatively limited supply owing to the limitations in suitable production area. Under such circumstances there can be little doubt that our wheat and wheat land will become more valuable as the nations bring their wealth to exchange for Canada's golden food supply. The present outlook for a bumper crop is already bringing demands for forty or fifty thousand harvest hands. Canada's most immediate need is larger population, and the increased opportunities offered in agriculture are going to be the real factor which will renew the flow of immigration toward Canada and ultimately produce the next great period of Canadian prosperity.

At Cochin, the work of investigation and administrative and financial agreement having been completed (four Governments, including those of two Indian States, were involved in the final negotiations), the third stage, now sanctioned, will include the dredging of the harbour and its approaches sufficiently to allow 12 vessels drawing up to 26 ft. of water to moor instream, the making of 100 acres of reclamation, and the erection of residences, offices, and other contingent works. Thereafter the fourth stage will begin, consisting of the provision of wharves or jetties, the extension of railways, the erection of a power house and the mechanical equipment of the port for dealing rapidly with freight. The plant already ordered consists principally of a powerful suction dredger discharging through 4,000 ft. of 42 in. pipe line. The dredger is expected to arrive under its own steam not later than October, 1926, by which time the pipe line will be ready for work.

It is anticipated that, provided there are no abnormal causes of delay, the works will be completed sufficiently for the harbour to be used by vessels drawing up to 26 ft. of water in 1929, further developments being determined by circumstances. A Bill for the establishment of a Port Trust will come before the Madras Legislature this year.

Economics in the West.

Trade Cycle and Financing of Business.

London, August 1st, 1925.—Since the development on a large scale of the joint stock company form of enterprise there has grown up a degree of correspondence between trade conditions and methods of financing that could never have been possible at a time when the vast bulk of the country's business was conducted by one-man or partnership concerns. The sphere of joint stock company operation has now, however, become so wide that it may well be possible to obtain valuable light on fundamental trade conditions through a study of the methods of financing new business adopted by companies of various classes from time to time.

To adapt a legal distinction, of great practical value, a company finances its operations in part by capital and in part by loans. The former constitutes the contributions of its proprietors, which they venture in the business and by virtue of which, if fortunate, they obtain their dividends. The latter may be represented first by debentures, debenture stock, notes, or bonds issued to lenders of money on definite terms of maturity and interest and rarely running for a period of less than three years. They are commonly issued to the general public, and holders of them stand in a relation to the company totally different from that of shareholders. The holder of securities such as those mentioned is a creditor, as opposed to a proprietor, of the company.

Alternatively, a company may borrow from its bankers at short term by means of overdrafts or advances, or it may borrow from other trading concerns by buying goods on credit. In these cases the debt must be liquidated in a comparatively short time and is frequently secured by a lien over some specific readily realizable asset of the company. The proportion between the short term type of financing and that comprising capital and long-term debt is highly variable. It is difficult enough to calculate in any particular concern; it is impossible to compute on a scale sufficiently wide to justify generalizations. But undoubtedly it varies as between industry and industry, and also with changes in business conditions. Owing to the impossibility of calculation this class of financing is excluded from consideration in this article.

The proportion between proprietors' capital and long-term debt can, however, be measured fairly easily, and for this purpose the term "capital" and "debt" will be used with the special significance already described. It is important to note, however, that in actual fact there is infinite variety in capital and in debt, while the dividing line between the two is not so clear as might be supposed. Thus a cumulative preference share of a well-established company of good record is to the investor almost as sound as the ordinary mortgage debenture, though the legal distinction still holds good. Similarly, income stock, which may be regarded as being in the category of debentures, receives its interest only if earned, and therefore in some cases might rank on a level with non-cumulative preference shares as far as the investor is concerned. For all practical purposes, however, the legal distinction between capital and debt may be adhered to.

It is important that capital once raised cannot, except in very special circumstances, be repaid, and that debt can only be redeemed according to the terms under which it was issued. While therefore debt is to some extent reducible, capital is merely expansible. The terms of the latter can only be varied by special arrangements, but those of the former can be changed to some extent by conversion as the old debt falls due for repayment. Apart from the latter consideration, therefore, it may be said that the effect of trade conditions on a company's long-term financial structure is confined to the new money which it raises from time to time to assist in the carrying on of its business.

Hence statistics of new issues serve as a guide to the effect of trade conditions on business financing. The figures used in the tables that follow exclude all conversions, bonus shares and issues to vendors, and short-dated bills. They do not include issues by private companies except where particulars are publicly announced. In all cases they are based upon subscription prices. Inasmuch, therefore, as shares are issued at par or above while debt is frequently issued at a discount the analysis does not exactly reflect the increases in nominal capital and debt involved in raising the new money.

During the past six calendar years the new money raised by various classes of companies has been as follows :—

New Money Raised by Companies of Various Classes, by years 1919—1924.
(000 omitted.)

	1919 £	1920 £	1921 £	1922 £	1923 £	1924 £
Banks and Discount and Insurance ..	26,855	19,651	5,035	1,893	1,408	5,107
Breweries and Distilleries	2,663	3,043	4,461	1,695	5,187	2,141
Commercial and Industrial	90,039	180,262	37,596	25,869	37,321	35,831
Electric Light and Power	3,604	1,982	7,018	3,240	9,924	4,680
Financial, Land, Investment and Trust ..	12,534	13,080	2,676	9,598	7,237	17,229
Iron, Coal, Steel and Engineering* ..	39,165	40,252	5,735	14,423	9,803	18,687
Mines	9,588	5,788	960	1,822	4,426	3,351
Nitrate	172	100	—	1,682	857	1,170
Oil	16,647	16,683	16,599	17,030	4,428	2,380
Shipping and Canals and Docks	8,668	15,636	6,652	16,893	4,550	3,236
Tea, Coffee and Rubber	3,134	6,642	1,306	473	3,474	1,767
Telegraph and Telephone	5,455	3,040	540	2,339	891	540
Tramways and Omnibuses	1,449	1,549	1,523	1,655	961	3,928
	219,973	307,708	90,101	98,612	90,467	100,047

*Including motors and aviation.

It may be noticed that railways and gas and water companies are excluded from the table. The reason for this omission is that these concerns comprise a special class, hedged around by complicated statutory restrictions which render their case exceptional. Nevertheless, tramway and omnibus companies, representing land transport, and electric light and power companies, representing public utilities, are included for the reason that to a large extent they are subject to no such stringent individual regulation.

The yearly figures for the industry groups have been split up according as to whether each separate issue was of the nature of capital or debt. The following table shows the distribution between debt and capital for each group over the six-year period :—

Types of Securities issued by Companies of Various Classes, Aggregate figures 1919-24.
(000 omitted.)

	Debt		Capital		Total
	£	% of Total	£	% of Total	£
Tramways and Omnibuses	7,315	66.1	3,749	33.9	11,064
Electric Light and Power	17,675	58.1	12,771	41.9	30,446
Shipping and Canals and Docks	26,001	46.7	29,634	53.3	55,635
Iron, Coal, Steel and Engineering	46,201	45.0	56,362	55.0	102,563
Breweries and Distilleries	5,976	31.1	13,213	68.9	19,189
Financial, Land, Investment and Trust	16,003	25.7	46,352	74.3	62,355
Telegraph and Telephone	2,340	18.3	10,466	81.7	12,806
Mines	4,548	17.5	21,387	82.5	25,935
Motors and Aviation	4,073	16.0	21,428	84.0	25,501
Tea, Coffee and Rubber	2,277	13.6	14,518	86.4	16,795
Oil	6,073	8.2	67,695	91.8	73,768
Banks and Discount and Insurance	188	—	59,760	100.0	59,948
Miscellaneous Commercial and Industrial	102,764	25.0	308,135	75.0	410,899

Two extremes are apparent in the table. At one end are oil and tea, coffee and rubber companies, which, since they possess no assets beyond what may prove either highly profitable or desperately disappointing, have in general no sure basis on which to secure debt. Companies of this speculative type, therefore, together with mines, must finance their development and exploitation through the unsupplemented capital of their shareholders. At the other extreme are tramways and omnibuses and electric light and power companies, which have valuable assets, of more or less permanent value, and which enjoy the prospect of regular earnings. With them it is comparatively easy to issue fixed-interest bearing securities, leaving the residual profit, large or small as may be, to the shareholders.

Banks and discount and insurance companies are in a class by themselves. They are the very antithesis of speculative concerns, but in order to strengthen the position of their creditors—depositors, policy-holders and others —the whole of their capital, using the term in

its broader sense, is supplied by the shareholders. Motor and aviation companies, again, are in a rather special position, being engaged in a comparatively new industry, of constantly varying processes, subject as a consequence to all kinds of unforeseeable risks. Telegraph and telephone companies, on the other hand, have enjoyed prosperity and have been able to raise almost all the new money required by the issue of capital. As regards financial, land, investment and trust companies, it may be suggested that the large proportion of capital is due to the fact that their assets themselves consist mainly of shares in more speculative concerns.

Miscellaneous commercial and industrial companies, ranging from hotel enterprises to textile concerns and from cinema companies to West Indian sugar plantations, may be taken as roughly typical of the whole. As a matter of fact, if the figures for all companies be combined it will be found that 73.4 per cent of the new money consisted of debt and 26.6 per cent of capital, as compared with 75 and 25 per cent respectively in the case of miscellaneous commercial and industrial concerns.

It is now possible to turn to a consideration of the influence of general trade conditions on the types of security issued for the purpose of raising new money. It is apparent from the first table that the total of new money raised is drastically curtailed when trade depression has set in. The black outlook discourages the expansion of old and the foundation of new enterprises, while the decline in the nation's productive output reduces the amount made available by saving out of the national income for investment in industrial development. The type of security issued, however, is scarcely less vitally affected. The following table gives the figures for all the industries under consideration, for each year included in the discussion :—

Types of Securities issued by Companies, by years 1919-24 :—

(000 omitted.)

	Debt		Capital		Total
	£	% of Total	£	% of Total	£
1919 ..	21,021	9.6	198,952	90.4	219,973
1920 ..	46,682	15.2	261,026	84.8	307,708
1921 ..	42,202	46.8	47,899	53.2	90,101
1922 ..	48,804	49.5	49,808	50.5	98,612
1923 ..	44,650	49.4	45,817	50.6	90,467
1924 ..	38,076	38.1	61,971	61.9	100,047

It will be seen that the proportion of capital dropped from 85-90 per cent in 1919-20 to slightly over one-half in the next three years, rising again to three-fifths in 1924. The movement may be attributed to two causes. First, those groups customarily issuing capital in preference to debt most drastically curtailed their total issues. So far as this peculiarity is due to the speculative nature of the enterprises, the drop may, therefore, be attributed directly to loss of confidence and unwillingness to undertake speculative risks in investment.

But the second factor is perhaps more important. Arising out of the loss of confidence, investors could be attracted only by offering greater security for their savings than they demanded in more prosperous times. Debt, therefore, took the place, to a large extent, of capital, and impetus was added to the movement by the fact that in order to repay short-term indebtedness on bills and other accounts, long-term securities of some sort had to be issued. In many cases debentures were the only kind of security issuable.

As trade recovers however, and optimism—with perhaps a measure of recklessness—returns, capital is more easily raised. Thus in 1924, which was a slightly better year than its predecessor, only two-fifths of the new money raised was received from subscribers to the various forms of debt, as compared with one-half in 1923.

From these details it is clear that there exists a fairly close correspondence between the general fluctuations in trade conditions—the ebb and flow of prosperity and depression—and the types of security issued by companies to meet their long-term financial requirements. Trade prospects, psychological reactions thereto, interest rates, the division of the national income between consumption and saving, are all the media through which the basic trade conditions make themselves felt. Consequently movements in the trade cycle are roughly paralleled by the proportion of debt to the total of new money raised by companies. To this rough extent the latter may be said to reflect fundamental trade conditions, including the progress of the business cycle, and to a less extent to anticipate forthcoming trade developments.

The area planted with sugar beets in Canada this year is said to be the largest in the history of the industry in that country. The area is reported to be 36,000 acres which is an increase of more than 20 per cent over last season. The crop prospects are favourable.

Foreign Economic Notes.

Indian Markets and British Producers.

London, 1st September, 1925.—Mr. George Pilcher's second article on the above subject appears in the *Financial News* of August 11. The immediate result of the separation of the Railway Budget has been a considerable programme of fresh railway construction, for the first time since the outbreak of the War. Before the War, railway expansion had proceeded but slowly in India, during the War it was non-existent, and since the War all the money that could be found for railway expenditure was needed for the rehabilitation and improvement of existing lines and the completion of lines already in hand. But one of the most crying needs of India is increased railway construction which has, in the past, invariably been followed by rapid increase in the productivity of rural areas and the consequent expansion of land revenue. The Railway Board has put forward a programme which will extend to the construction of over two thousand miles of line, to be completed by 1932, at a total cost of about 33 millions sterling; but, with British prices what they are, it is a question whether, with justice to the Indian taxpayer, even a considerable proportion of the money can be expended in Great Britain. If the British Government were to accord a loan, on specially favourable terms, to the Indian Government in respect of a large programme of railway construction, with the proviso that the money was to be spent in Great Britain, the result would be of the greatest value to India, whose urgent requirements in railways are vastly greater than even the imposing addition now proposed by the Railway Board, and of almost equal value to Great Britain owing to the extra employment accruing in the iron, steel and engineering trades: and the expenditure of the British Government, in granting such a loan, would be immediately offset by the reduction of outlay in respect of extended unemployment benefits under the Insurance scheme.

It is interesting to note that the programme of new construction, referred to in Mr. Pilcher's article, includes the connection of the main Bengal-Nagpur line between Calcutta and Bombay with the new port of Vizagapatam, now in process of construction. This will open up an area of 125,000 square miles in the Central Provinces, at present wholly without railway communication. "The first independent railway budget," says the *Financial News*, "for the first time brings into foreground view the fact that the possibilities of transport development in India are still large." This is, indeed, to understate the case—the possibilities are much more than large; but, if the first independent railway budget has brought even so much of the real facts prominently into view, it has done a very great service, on which, one may reasonably hope, it will improve in the years to come.

Egypt to India by Air.

A provisional agreement has been signed by the Air Ministry and Imperial Airways, Limited, for the establishment and operation, under a five years' contract, of a commercial air service between Egypt and India. Although steps will be taken at once to prepare for the inauguration of this service, it is not expected that it will be in actual commercial operation until the autumn of 1926. In view of the special character of the route there is good reason why the authorities concerned should firmly set their faces against a premature start. With adequate organization the service can be made as simple and as safe as the Paris air mail; but it would be foolish to ignore the fact that its organization is a much bigger problem. The reported decision that only three-engined machines are to be employed will, it is to be hoped, prove true. Atmospheric conditions between Egypt and India, over the Syrian Desert and across the Persian Mountains, impose a greater strain on machines than they experience in Europe, and it is essential that the risk of forced landings should be reduced to a minimum. Another point to be borne in mind is that the exploits of individual airmen in long distance flying should not be allowed to form the standard for the pilots of a commercial company. It is one thing to fly "on one's own" one or more special journeys, and a very different proposition to undertake the work of routine flying. The Egypt-India Air Service must be equipped with a large staff of experienced pilots, who must not be overworked.

Road Fund.

The proposal to use a portion of the Road Fund temporarily to assist in financing the schemes of electrical development which are

being prepared has not unnaturally, having regard to the national importance of the work of improving our highways, raised a storm of protest. Referring to the matter in the House of Commons Mr. Churchill is reported to have said :—

"The other day a rumour was set about that the Chancellor of the Exchequer contemplated a raid on the Road Fund. Immediately there was a mobilization of all the motorists, all the agriculturists, every interest connected with the Road Fund. He thought it ought to be considered, like everything else. Whether, in fact, we could afford to spend as much as £17,000,000 a year on the development of roads was surely a question which should from time to time be reviewed by the Government. Some of these great extended roads might well be beyond what the present state of our finances entitled us to afford. At any rate, no item of expenditure ought to be sacrosanct, and not even allowed to be scrutinized, because of the indignant resentment which its particular supporters display."

There is need here to start an argument as to whether cheap power is more important than the providing of adequate transport facilities. A very strong case has already been made out for non-interference with the development of roads. Obviously this development cannot be left to private enterprise. But with electricity the case is different ; a little encouragement is all that is needed to make private enterprise quite equal to the task of providing the cheap supplies required.

Local Authorities' Town-Planning Schemes

Local Authorities throughout the Kingdom are showing an enterprising spirit in the preparation of town-planning schemes, which is very much to their credit. Ministry of Health figures show that as many as 129 local authorities have started such schemes for areas with population over 20,000 ; while town-planning schemes are being voluntarily prepared by 163 local authorities. During the quarter terminated June 30th last, the Newbury T.C., the Birkenshaw, Knutsford, Little Lever, Littleborough, Lymm and Walton-upon-Thames Urban District Councils, and the Barton-upon-Irwell, Chelmsford, Hitchen, Macclesfield and Staines Rural District Councils have been among local authorities who have of their own volition taken effective steps in the preparation of town-planning schemes.

Traction Engines and Rubber Tyres.

All those on whom falls the responsibility of road maintenance in these heavily-trafficed days will welcome the news that the Ministry of Transport has received an assurance from the Traction Engine Owners' Association of Great Britain and Ireland and also from the Showmen's Guild that it is hoped that traction engines owned by their members will be fitted with rubber tyres before April 1st, 1926, this being within the time limit suggested by the Ministry.

The Purchase of Wembley.

It is well known that, from the financial point of view, the Wembley of 1925 has been even more disastrous than it was in 1924 ; and I have already noted some of the proposals that have been made for the future administration of its permanent buildings. Now, however, comes a proposal, from Colonel Harry Day, the variety agent, to turn half the British Empire Exhibition into model dwellings, and the other half into an amusement park. But so far the authorities at Wembley have made no sign that they are willing to sell. They feel—and it is difficult not to sympathize with them—that it would be a great "come-down" if buildings erected to an Imperial purpose were suffered to decline into dwellings at £60 a year and mere cheap amusement parks. But so much was lost in 1924, and so poor have been the attendances this year, that it is extremely doubtful whether Parliament could be induced to consent to the grant of yet another million or two. Yet what a fall : to have Wembley a new suburb of cheap villas !

Cities of the Future.

Cities of the future will be aerial, according to Frederick Kiesler, young Viennese architect who is directing the Austrian Section of the Decorative Arts Exposition in Paris. Houses will be built on platforms, he says, supported by steel girders several hundred feet above ground, and perhaps higher. He thinks it absurd that in these days of air-planes and airships we should still be crawling around on the surface of the ground, and even burrowing underground when establishing our living quarters. The American sky-scraper, he said, while an improvement, is only a semi-solution of the problem. Distance, he added, is a factor which, owing to rapid transport facilities and modern technical methods, no longer exists. We can live anywhere we like. Aerial platforms can be erected at any spot, above beautiful gardens or shady forests, spanning rivers or rising from bottom of lakes—a sort of super-lake dwellings after the pre-historic pattern.

The benefit to public health could not fail to be enormous through the living in the fresh air with a maximum of sunshine. The steel towers supporting the platforms will contain rapid elevators, canalization, etc., carrying dwellers up and down between the houses and the ground gardens and roads while other platforms will form landing places for air-planes. Kiesler does not claim to have discovered or invented anything. He says the idea is a mere matter of logical development of present-day conditions.

The Use of Cheques in France.

It takes long to change the habits of a people, and the French are only very slowly getting accustomed to using banks and cheques in their ordinary business, in spite of the fact that an account paid by cheque does not now require a receipt stamp. It would appear, however, that when they do take to a bank they take to it enthusiastically, for a story is told of an old lady who, being advised to entrust her valuables to the bank during the holidays, recently turned up at the central office of the Credit Lyonnais with her cat, and was only with difficulty persuaded that the bank could not undertake to look after it and give it two slices of meat and a little milk every day.

Always Wrong.

Mr. J. Haslam, in a speech at a meeting, in connection with the Federation of Grocers' Associations, recorded in the *Yorkshire Post*, said that whatever grocers did, they would, like other people, be wrong. "If you are not successful in business," he remarked, "you are incompetent. If you are successful, you are a profiteer. If you go to church you are a hypocrite. If you do not, you are a sinner. If you give away money or are hospitable, you do it for advertisement. If you do not you are stingy. If you drive a Rolls-Royce, you are extravagant. If you drive a Ford you are the joke of all your friends. If you wear both belt and braces you are a pessimist; if you wear neither you are an optimist. It is very difficult to carry on under these conditions."

Paint that will Stop Corrosion.

"A new paint which may stop the havoc of corrosion—which is estimated to cost this country £100,000,000 a year—has been invented by a chemist in the service of the South Staffs. "Mond Gas Company," says the *Daily Express*. "Years of patient research and experiment have resulted in the evolving of a formula for a bituminous paint which was found to possess the power to make itself part of the material to which it is applied and render it impervious to the effect of acids, gases, water and extremes of heat and cold. When the new paint was applied to a gas plant registering a heat of 725 deg. Fohr., it remained for months as fresh as on the day of application. Other paints had blistered off in five days at the most. Practical test has proved that the paint 'keys itself' into the metal and wood to which it is applied, is capable of expanding and contracting with it, thus avoiding cracking, and prevents corrosion almost indefinitely."

Economic Research in the Bombay Presidency.

The Report of the Forest Administration in the Bombay Presidency, including Sind, for the year 1923-24 states :—The Rosha distillation plant ordered out by the Director of Industries for experimental purposes could not be got ready in time at the site but it is unlikely experiments with this plant will be necessary now as negotiations are on foot for giving the Rosha contract to a Syndicate who will employ modern methods of distillation. A sample of Navapur grass kept in the famine storage was tested for paper pulp in the Forest Research Institute and was found unsuitable for the purpose. Also 400 Dowga bamboos were sent to the Forest Economist for experimental manufacture of paper pulp and the results of experiments are still awaited at the time of writing this report. Experiments were arranged in a jute mill at Calcutta and in a cotton mill at Hubli to test picking sticks of *Lagerstræmia microcarpa*, *Anogeissus latifolia*, *Hardwickia binata*, *Grewia tiliaefolia*, and *Stephegyne parvifolia*. The last broke very soon, the other samples lasted well though wearing faster than Hickory sticks. Further tests are in progress. Similar experiments were instituted through the Forest Economist, Forest Research Institute, for testing *Diospyros melanoxylon*, *Ougeinia dalbergioides* and *Grewia* against Hickory picking sticks, and an *interim* report with regard to the first two and *Anogeissus latifolia* has been received indicating their suitability.

Books in Brief.

Short Reviews of Recent Books.

The Wealth of India.

By P. A. Wadia and G. N. Joshi. Messrs. Macmillan & Co., London, Madras and Bombay. Price 21*sh.* net.

We welcome this work for the double reason that it is both well written and systematic in treatment. Of the authors one is a Professor of Politics and the other a Lecturer on Economics; together they make an excellent combination for producing a work of the kind they have presented the reader with. They have tried to dig deep and to lay bare the foundations of economic life in India, with a view to formulate a definite economic policy for it. This policy, they base on ascertained principles and facts. A volume like this, written in language at once simple and luminous, has long been a desideratum, and is well worthy of the care and attention the authors have bestowed on it. The work is one that ought to be on the shelves of every publicist and administrator in this country. It is a handy *vade mecum* as well of current views and discussions on the leading socio-economic problems of India, and as such it ought to be studied with care by every one interested in the well-being and progress of this country. To universities, we would specially recommend it, as it fulfils in a larger measure, in our opinion, the requirements of college students in Economics. The authors have apparently had in view the student class as well in writing this book, for the style and method of treatment is such as to make it eminently suitable for use as a text-book for the college classes of our universities.

We would draw some attention to one or two matters before we close this brief review. The authors, we are glad to note, do not adopt the views of others without submitting them to close examination. A case in point is their study of castes (p. 126); another is the joint family (p. 130); a still another is their section on laws of property, succession and inheritance (p. 135). There is, accordingly, a freshness about their views which adds to the value of their work. A chapter of immense interest is that dealing with "Psychology and Economics" (Chap. IX) in which the reader will find the basis of well-being in East and West analysed and discussed with considerable point.

This work is in many ways an admirable one. We would suggest, when the next edition is called for, that it be recast in a fashion that its subject-matter may fall into distinct "Books", each treating with a main topic, each main topic being sub-divided into its secondary subjects, to which the chapters forming the book may be devoted. The book will gain much by a division of this sort. It will enable the reader to follow the authors more closely, quite apart from the fact that such a division is likely to help the authors themselves in regrouping their topics in a more telling—not to say intelligable—fashion. As the ground covered by the authors is large, some such division as is suggested herein will, we think, be found necessary both by the authors and by their readers.

The Elements of Railway Economics.

By Sir William M. Ackworth, K.C.S.I., M.A. New Edition by the Author and W. T. Stephenson, B.A. Clarendon Press, Oxford. Price 3*sh.* 6*d.* net.

Sir William Ackworth's book on *Railway Economics* is so well known that it hardly requires many words to commend it. Good vine needs no bush. So is a good book—it needs no puffing. The book is about the best in its own special domain—it is well-written, it is clear and comprehensive and handy for the busy man. That it has run through many editions without change shows its utility. In view of the remarkable changes which have taken place in regard to Railways and Railway management, it was a good idea to have revised the book. Sir William has been very well seconded in his arduous task by Mr. Stephenson, whose practical knowledge of the requirements of students and of lay learners he describes as "unique". In this edition, we note that the economic argument has been left practically untouched while the facts have been brought up-to-date and the illustrations drawn are from the most recent experience. Two new chapters sum up the changes introduced since the war into Railway administration. The final chapter on Passenger Traffic is also new. It is full of interest. As we read it through, we felt that India would be all the better for a Cheap Train Act—we make a present of the idea to Sir Charles Innes, the Railway Member of the Government of India. For Sir William Ackworth concludes his Preface to the new edition in words which deserve to be quoted:—"The day of the old railwaymen, with their purely practical training and their rule of thumb methods, has passed. Railway undertakings are to-day organized on so vast a scale that their management is beyond the grasp of the practical man. Millions of money can be saved on English railways, for the benefit partly of the shareholders, but in much larger degree of the community at large, if the rising railwaymen of the present and the immediate future can be taught, to establish and to justify their practice on the basis of sound economic theory, continuously checking the application of theory by familiarity with that which has been done or is being done or attempted to in other places outside the range of their own possible individual experience." These are wise words and well said. We heartily wish that they did not fall on deaf ears in India. The book would be all the better for a good Index and we trust one will be supplied, when the next reprint of this Edition is called for, by Mr. Stephenson. A book well worthy of a large circulation in this country.

Agricultural Co-operation in India.

By John Matthew, B.Litt., D.Sc., Professor of Indian Economics, University of Madras. C.L.S. for India, Madras. Price Rs. 1-8-0.

This is the first of a new series of helpful publications projected under the head of "Books for the Times" edited by Dr. A. J. Appasamy, M.A. (Hon.), D.Phil. (Oxon.) and published by the C.L.S. for India, Madras. The series is intended to include careful and scholarly studies bearing on the important questions of the day—political, social, economic and religious. The present volume comes under the head Economic and in our opinion a better subject could not have been chosen to commence the series. Mr. Matthai's study of co-operation and its presentation is on, what we

might call, the "College Lecture" model. The Introduction presents us with a general idea of co-operation—its meaning, its underlying principles, its development and its forms. The length of this introduction is truly Shavian in character; still, we would not complain against it. Sometimes it is useful to have introductions of an all-embracing character and the subject of co-operation is one of those that require lengthy treatment—so wide are its ramifications. Mr. Matthai deplores (see p. xxxix) the obscuring of the spiritual aspect of the movement by its merely business aspect. The cry is not a new one but it is right that a publication of this kind should raise it and reiterate it. What has happened in Germany and in England might also happen here. That is the basis of Mr. Matthai's fear and we think there is more than an element of truth in it. Mr. Matthai's book proper is divided into various sections dealing with most of the topics with which the idea of co-operation is bound up with. In the first we have a summary of the legislation bearing on the subject; then we have accounts of some indigenous types of co-operation and co-operation anterior to legislation. Rural Indebtedness in India and the remedies tried in connection with it and types of co-operation (Raiffeisin, Schalze-Delitzsch, and Luzzati) next claim attention. A statistical summary of the growth of co-operation follows and then we have sections on Composition of Capital, Deposits and Loans, The Reserve Fund, Lending by Co-operative Societies, Local Management, Federation of Co-operative Societies, The State and Co-operative Movement, and Co-operation for Purposes other than Credit. The final section is devoted to certain general observations in which an attempt is made to gauge the economic and moral effects of co-operation in this country. The saving in interest to the rural population, as the direct result of co-operation, Mr. Matthai estimates at about 1.75 crores. "This in itself," he says, "is a substantial saving." Of course, this is only *one* of the economic results of co-operation. The question how far the co-operative movement has been able to reduce the prevailing rate of interest in a locality is touched upon but is not adequately developed for want of statistical information. Mr. Matthai rightly throws out the suggestion that rural indebtedness cannot be tangibly reduced so long as long-term loans are impossible by the system of short-term deposits in vogue. Hence the need for Land Mortgage Banks, for which the demand is becoming nearly insistent now. There are other topics of this nature touched upon in this chapter, to which we would draw special attention. Mr. Matthai writes with knowledge of his subject and deserves to be congratulated on producing a book which is not only readable but also suggestive. The C.L.S. of India deserve a word of praise for the neat manner in which they have presented the book to readers.

Acknowledgments.

1. *Perfumery and Essential Oil Record*—Year Book and Diary for 1925.—Published by Messrs. Street & Co., 8 Leslie Street, London, W. E. 2. [Full of valuable information to those interested in the Perfumery Trade.]

2. *Agricultural Research Institute, Pusa.*—Publications: Bud and Boll-Sheding in Cotton—A Preliminary Enquiry by G. R. Hilson, B.Sc. and V. Ramanatha Iyer, L.Ag. and R. Chokkalingam Pillai, L.Ag. Bulletin No. 156.

3. "*The Experimental Sullage Farm, Lyallpur.*"—By P. E. Lander, M.A., D.Sc., A.I.C. Bulletin No. 157.

4. "*A New Fodder (Siloed Shisham Leaves) for Dairy Cows.*—By P. E. Lander, M.A., D.Sc., A.I.C. and Pandit Lalchand Dharman. Bulletin No. 158.

5. "*Preliminary Investigations in the Bacteriology of Milk.*—By J. K. Walton, M.A., M.Sc. Bulletin No. 159.

6. *U. S. A. Department of Agriculture Publications.*—Experiment Station Record. No. 6. (October Abstract Number.)

7. *U. S. A.* "*Experiment Station Record*", Number 7, November 1924.

Gandhiji and Child Motherhood.

The Vice-President of the Women's Indian Association writes to us:—

I wrote to Gandhiji the other day asking his opinion on the question of Child Motherhood. He kindly answered that he most strongly supported any effort to raise the age, and added that he would write on the subject in the next issue of his paper. The following paragraph is an extract from his article, and we would most earnestly commend his words to the careful consideration of all Gandhiji's admirers and to those who profess to follow him. A leader's duty is to lead, and Gandhiji here gives a very definite and strong lead with regard to the unnatural and bad custom of Child Motherhood. May all who have ever cried "Mahatma Gandhi Ki Jai" now follow him. Mere lip-service to a great leader is of no avail, deeds not words count.

"I must confess that I am ignorant of the Bill, but I am strongly in favour of raising the Age of Consent not merely to 14, but even to 16. Whilst, therefore, I can say nothing about the text of the Bill, I should heartily endorse any movement whose object is to save innocent girls of tender age from man's lust. A so-called marriage rite ought no longer to confer legality upon an immoral and inhuman act which consummation, even at the age of 14, in my humble opinion, undoubtedly is. Sanskrit texts of doubtful authority cannot be involved to sanctify a practice which is in itself immoral. I have witnessed the ruin of the health of many a child-mother, and when to the horrors of an early marriage is added enforced early widowhood, human tragedy becomes complete. Any sensible legislation in the direction of raising the Age of Consent will certainly have my approval. But I am painfully conscious of the fact that even the existing legislation has proved abortive for want of public opinion to support it. The task before the reformer in this, as in many other directions, is most difficult. Constant and continuous agitation is necessary if any real impression is to be made on the Hindu public. I wish every success to those who are engaged in the noble task of rescuing Indian girls from premature old age and early death, and Hinduism from being responsible for bringing into being ricketty weaklings."—*Young India.*

May the Men and Women of India follow Gandhiji now in his desire to bring about this reform! No true follower of his should allow his daughter or wife to become a Mother until she is sixteen or, at the least, fourteen years old.

Adyar, Madras,
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External Capital Committee.

I.

By S. Subbarama Aiyar, M.A., Dip. Econ.,
Senior Lecturer in Economics, Madras Christian College.

I gladly respond to the Editor's invitation to express my views on the recommendations of the External Capital Committee. The full Report is not before me but only a telegraphic summary of the main conclusions. The main recommendations of this Committee are the same as those of the Majority Report of the Indian Fiscal Commission and therefore they are presumably based on the same reasoning as is found in the latter Report.

In order to avoid confusion of thought it is necessary to define the scope and meaning of capital. The word capital is used at least in three different senses by economists and businessmen : (1) Capital is an instrument of production such as the tools of the artisan, the plough of the farmer or the machinery used in large-scale business. (2) The word is also used to mean 'loan capital' or money that can be used to buy real capital and other appurtenances of production. (3) It denotes stocks, shares or bonds which are mere scrips of paper which invest the owner with claims on real capital or its earnings or on other peoples' labour. Moreover capital (*human* as distinguished from *material*) is sometimes used to mean human energies (technical skill, organizing capacity, etc). Thus as regards external capital the problems must have reference to the importation of (1) machinery and tools, (2) loan capital or money, (3) stocks and shares of industrial concerns possessed by investors abroad and (4) technical skill or organizing capacity of foreign experts.

In the matter of machinery for large-scale production India is at present mostly dependent on other countries. Further Indians recognize the necessity at present of importing the services of highly trained technical experts from abroad to start and work their newly started industries. It should be the aim, however, to provide them both, if possible, within the country itself.

The difference of opinion centres round the question of the use of foreign loan capital and of permitting foreign nationals to hold stocks and shares in Indian industries.

There is a general feeling that loan capital is comparatively scarce in India and its importation in the present stage of industrial evolution is necessary. Nobody objects to Indian companies or the Government raising loans by means of debentures in the foreign market when such are not forthcoming in India itself. All industrially backward countries may have to do it in the initial stages of their development. I agree with the Committee in this conclusion :—"As regards the control of external capital, where the external capitalist is merely entitled to a stipulated rate of interest and only requires rights of control when there is default, as in the case of State and Municipal loans and bonds and debentures of companies we do not consider any measures of control necessary ; *but in the case of Government and quasi-Government loans, the rate of interest should not be the sole consideration in placing such loans ; other things being equal, preference should be granted to the Indian investor.*" (Italics ours.)

The central question on which there is difference of opinion is where a foreign investment carries with it the control of an undertaking. This Committee as well as the Majority in the Fiscal Commission concede that "when the Government grants particular concessions

(such as bounties or loans) to the industry, it should exercise such control as would lead to the advantage of the country," but they are of opinion that "where the concession is general, as in the case of a protective tariff, it is impracticable to effect any discrimination". The control to be exercised in the former case takes three forms :—First, reasonable facilities are to be granted for the training of Indians and secondly, in the case of a public company, registered under the Indian Companies' Act of 1913, it should have a rupee-capital and thirdly, a proportion of the Directors as the Government may prescribe, should consist of Indians.

The Government Committee thus recognizes the need for favouring the capitalists of Indian domicile when the tax-payers' money is *directly* utilized to encourage industries in India, but not when it is *indirectly* done by means of a protective tariff. Not that this Committee as well as the Fiscal Commission do not recognize the advantages of these conditions, but they suspect that they may have the general effect of retarding the economic progress of the country by discouraging the investment of foreign capital by people of foreign domicile.

The Majority in the Fiscal Commission advanced some reasons against legislative interference on these lines. (1) The practical result of attempting to secure them by legislation would be that such business concerns as did not wish to comply with these conditions would be encouraged to carry on as private companies instead of forming themselves into joint-stock companies and this would be an unfortunate result (para 291). (2) The restrictions proposed amount to an interference with private rights which it is desirable to avoid. (3) Even if this consideration is ignored, it would not be possible to frame any legislation on these lines which could not easily be evaded by a foreigner acting through the intermediary of an Indian nominee (para 293). (4) If legislation is enacted putting obstacles in the way of employment of foreign capital, India's credit abroad will be injured and the British investor also will become shy ; the result will be that India will not be able to obtain the money that she requires both for public and private purposes or will only be able to obtain it at materially higher rates.

In reply to these objections we may mention the following :—(1) In the words of the Minute of Dissent : "There is very little likelihood of individual firms providing the whole capital themselves by registering private companies ; if, however, such a contingency arises, it can only mean that the profit of the enterprise is expected to be so substantial that the promoters desire to keep the whole of it to themselves and carry it away to their countries. If such a danger materializes and foreign firms resort to such expedients, we think that the Government of India should, by means of legislation or otherwise, take steps to put a stop to it" (para 54). (2) The argument based on interference with private rights will not hold good, for the State has always got the right to interfere with private rights if it results in greater benefits for the community as a whole. (3) To get Indian nominees who will assist the foreigners to circumvent the law is not always easy, but even if there is the danger it is not more than in the case of other laws intended to safeguard the rights of private individuals. (4) The credit will depend ultimately on the confidence that an investor has in the capacity, honesty, etc., of the person who borrows and the profitable nature of the enterprise. If the Indian companies or the Government of India can make sure of their credit, they can borrow money in the foreign market at the market rate. The Tata Iron & Steal Co. floated a few years ago a debenture loan of two millions sterling in the London market.

Prof. Coyajee, a member of the Indian Fiscal Commission, expressed the view that Indians can in the fulness of time take over the shares of foreign enterprises if they so like and that meanwhile India stands to gain by the free investment of foreign capital (*vide* Lectures on Indian Fiscal Policy). We suggest that this consummation will be reached sooner than later if the capital is expressed in terms of rupees and the Directorate of such companies is domiciled in India. To do this is a sacrifice on the part of foreign capitalists, but it is to be hoped that they will be prepared to undergo it, especially in view of the fact that under a regime of protection the Indian consumers are asked to bear the burden of a higher price for the sake of industrial progress. It is well known that in the present stage of India's industrial evolution the Indian investors have great confidence in the ability, honesty and organizing capacity of foreign firms and it is therefore a glorious duty and privilege of theirs to lend them a helping hand.

There remains the question of reservation of shares to Indians. There is the practical objection that such a restriction will result in endless trouble in book-keeping and in the

dealings of the share market and is very difficult to enforce, though it may not be impossible to set apart some shares for the Indian public at the time of initiation of an enterprise. Such a restriction, however, is unnecessary and all that Indian investors can reasonably claim is to insist that share capital shall always be in rupees and not in the currencies of other nations.

I think, therefore, that we may resaonably lay down that that the three methods of control recognized in the case of undertakings receiving direct Government concessions should, as far as possible, be also extended to those others which are started under the ægis of protection. Indeed there is really no distinction between Government granting subsidies or bounties out of money collected by them by way of taxation and allowing an industry to tax the people indirectly by means of higher prices resulting from protective duties.

The future of industrialism in India depends on the sufficiency of indigenous capital. I endorse fully the following views of the External Capital Committee :—"It is advantageous to India that its requirements for capital should be supplied from internal rather than from external sources, so far as internal capital is forthcoming. The real solution of the problem of External Capital lies in the development of India's own capital resources." Again, "India possesses a vast store of dormant capital awaiting development and, in order to make this available for investment, banking facilities must be increased and extended. We would emphasize the importance of a co-ordinated survey of banking facilities being undertaken at the earliest opportunity, followed by a detailed examination, by an expert committee or committees, of the lines along which progress should be effected."

II.

By A. S. Venkataraman, B.A.

It is well-known that the appointment of the External Capital Committee (Sir Basil Blackett Committee) came in the wake of the Government's promise in June 1924 to examine the influx of foreign capital into India. The Report that is now available, contains as usual minutes of dissent, at this time by Messrs. Pandit Malaviya and Goswami. An important point on which all the nine members are agreed is that the real problem consists in the development of India's own capital resources and that an approach be attempted by a preliminary survey (to be followed later by a detailed examination by experts) of the banking organization and credit facilities in India, if the vast store of dormant capital is to be made available for investment.

It is rather a matter for surprise that the Government having more or less committed itself to a policy of Protection (by means of tariffs or bounties) would not carry it out in its spirit and in all its implications. Instances after instances can be multiplied where the ostentatious announcement of a general principle or the taking up of a definite position in the mass, has been secretly surrendered in details. Subtleties of expression and guarded statements here and there punctuate the recommendations. External capital is not only unobjectionable but also valuable in assisting India's economic development but it is subject to certain limitations. Control of foreign capital is necessary in certain circumstances but such control should not take the form of general measures discriminating against it or penalizing it by way of taxes, etc., as it would operate adversely on the development of India's resources and on the Indian investors' interests by impeding the growth of Indian industries and by restricting the transferability and the market value of the Indian investors' holdings. Somehow by some means or other, Indian capital should be made available for investment and that without any restrictions on any foreign capital. It would have been better if the Committee had taken care to point out the precise limitations subject to which foreign capital may be found valuable. What sort of control is to be exercised, if some measure of control is deemed necessary. If general measures restricting the flow of foreign capital or penalizing it are ill-advised and inadmissible, what after all is to be the nature of restrictions ? Indeed this is a moot point and Pandit Malaviya would not agree. According to him, the problem is how to ensure that a certain portion of capital shall be Indian. If general restrictive measures are either impracticable or injurious to the Indian investor, what is the way out of the impasse ? Protection having been adopted as the Government's policy either in the shape of tariffs or bounties, industries to be benefited by such concessions should be largely Indian

in the matter of capital and control. It should be borne in mind that the objective is to promote Indian enterprise with Indian capital and under Indian control. It is problematic how this would be achieved if concessions like tariffs and bounties are given to Indian industries and when the flow of foreign control is unimpeded ?

The Minority Report of the Fiscal Commission observes : "There is really no distinction between Government granting bounties or subsidies out of money collected by them by way of taxation and allowing an industry to tax the people directly by means of higher prices resulting from higher duties. In the one case, the Government tax the people, while in the other Government permit the consumers to be exploited by means of higher prices due to protective duties. There is no distinction between direct concessions and the right to establish industries within the tariff wall."

When it is conceded that there is no distinction between the two referred to above, there are special reasons why all industrial companies should be incorporated and registered in India with a rupee-capital. To quote Sir Frederick Nicholson: "I beg to record my strong opinion that in the matter of Indian industries we are bound to consider Indian interests firstly, secondly and thirdly.... I mean by *firstly*, that the local raw products should be utilized, by *secondly*, that industries should be introduced and by *thirdly* that the profits of such industries should remain in the country." One of the reasons why foreign capital is advocated is "whether the immediate profit goes to a foreign or Indian capitalist, the main or ultimate end, *viz.*, the enrichment of the country, will be attained". There is a fallacy underlying this argument. The enrichment of the country depends on the profits of the industry remaining in the country. National wealth can thus be increased in a shorter period of time than by the taking away of industrial profit to foreign countries. So the conditions to be laid down absolutely in regard to foreign enterprise are, according to Pandit Malaviya, (1) the incorporation and the registration of the Company in India in Rupee-capital, (2) a reasonable proportion of Indian directors on the Board and reservation to Indian subscribers, (3) extension of reasonable facilities for the training of Indian apprentices, (4) the Company's liberty to acquire the remaining capital, if Indians do not subscribe within a definite period.

In his book on the Indian Fiscal Problem, Prof. Coyajee is disinclined to adopt any course restricting the flow of foreign capital on the grounds (1) that conditions essential to exploitation by foreign capital are a matter of the past, (2) that a vast amount of foreign capital is essential for India's industrial development, (3) that under present circumstances not much of foreign capital is likely to be attracted, (4) artificial remedies for the nationalization of foreign capital have not proved successful anywhere, (5) the competition of foreign capital would lighten the burden of Protection on the Indian consumer, would shorten the period of infancy of industries and would give the much needed experience, organization and industrial environment and therefore the formulation of a policy of a restrictive character may be delayed.

Between these two sharply divided views, it is hard for us to judge, but it was open for the External Capital Committee to gather reliable data or to suggest ways and means of doing it. Data on the following points would be valuable :—

(*a*) The extent of foreign capital in the country ;

(*b*) how much of it was loan capital and how much, exploiting capital ;

(*c*) how much enjoyed control of industries in which it was interested ;

(*d*) how far it constituted a beneficient or maleficient agent ;

(*e*) the different forms of investment.

It would appear that the Committee was not either convinced of the usefulness of such data or deliberately avoided them for reasons best known to itself. No economic thinker will deny the usefulness, value and nay, the absolute necessity of such data and yet it is regrettable to notice that it escaped the scrutiny of the Committee. Foreign capital in India is estimated at Rs. 700 crores. How far this figure is reliable, ought to have been examined by the Committee. Under the circumstances narrated above, one cannot help remarking that a valuable opportunity was lost on the Committee. The only point the Committee was at pains to suggest, is the proposal of an extensive survey by the Government into the Indian banking position to be followed by the appointment of an expert committee.

If France must pay she also should be paid, and she cannot in any case pay more to her Allies than her enemies pay to her.—*M. Caillaux*.

Indian Economic Studies.

The Madura Saurashtra Community—IV.

By K. R. R. Sastry, M.A., F.R.Econ.S. (London).

CHAPTER XIII.

INEQUALITY—YET ANOTHER ILLUSTRATION.

"The overshadowing fact in the distribution of property and income is inequality." * A preliminary survey of how this problem has been studied elsewhere is sure to have its educative value at any rate. Statistics, based on income-returns, may be considered fairly accurate. Mr. Charles Booth in his "Life and Labour of the People of London" resorted to the test of servant-keeping. This is obviously out of the question. The distribution of the ownership of property is another line of approaching this problem.

So far as this community is concerned, the income-tax figures collected may be taken as sufficiently accurate for purposes of calculation. But there is always guess-work concerning those below the exempted amount and the assessment of those whose income is near the limit, is believed to be very inexact. With these essential reservations, certain observations can be made from the following list of persons paying income-tax during 1921-22 :—

Sums assessed	No. of persons
A. More than Rs. 20,000 ..	25
B. From Rs. 4,000 to Rs. 19,999 ..	304
C. From Rs. 2,000 to Rs. 3,999 ..	318
Total ..	647

In view of the industrial pursuits of the community, the line of demarkation for rich men is to be drawn at Rs. 20,000. In such a case about 4% of the taxed persons in the community are rich ; 47% of the taxed are well-to-do and the remaining 49% belong to the middle class. When the proportion to the whole population is taken, these observations will have a closer bearing to the problem of inequality.

It is more accurate if we take into account the number of Saurashtra families for purposes of this calculation. According to a fairly accurate enquiry, there are 6,528 families among Saurashtras. Of the whole number of families, a trifle over 5% (5.04%) belongs to the well-to-do. If the rich alone are taken into account, only one in 250 families is rich.

* F. W. Taussig. 'Principles of Economics', Vol. II, page 239.

Another line of calculation based on the ownership of property was also made.

Rupees in lakhs	No. of families
30	1
20	1
10	1
8	2
7	1
6	2
5	2
4	1
3	8
1 to 2	19
50,000 to 99,999	40
Total ..	78

The proportion of distribution of property gives a higher percentage of the rich in the community. A little above one per cent of the families turn out to belong to the rich class.

With the aid of calculations in pre-war Prussia where the best tax statistics were available, one may also try to arrive at the proportion of middle classes. It was supposed in Prussia that one-half of the persons who are not assessed, had yet an income as large as the taxable minimum. The mainly industrial character of the Saurashtra community, it is hoped, will warrant a comparison with Prussia. That means 3,258 families, *i.e.*, [½ of (6,528–647)] +318 (2,940+318) may be brought under what Charles Booth calls the "Comfortable working" class. About 52% of the families come under the middle class. Excluding the 5% of the well-to-do class, one arrives at 43% of the community who are leading a hand-to-mouth existence.

Oral enquiry with reference to the percentage of the last class goes upto 60% of the community. Having the calculations on the Prussian example as the barrier on the optimistic side, a safe conclusion will be that 43% to 60% of the community are leading a hand-to-mouth existence.

CHAPTER XIV.

STRIKING SHORTCOMINGS.

Under communal organizations the temperance work started by the Varnashrama Dharma

Sabha and Brahma Vidyashrama Sabha was noted. The enormity of the evil which these Sabhas undertook to root out, is still not sufficiently realized by even the enlightened few of the community.

Enquiries among more than 20 representative men of the community bring into full light different percentages of this evil. One dye-worker gave the information that only a small percentage of the working classes resorts to drink. In support of this, he brought in the influence of the 3 cinemas and their inherited habits of working in the dye-tubs. It turned out in the end that this witness was in a mood to protect the fair name of the community at the expense of truth.

The drink evil, though slightly affected for good by the temperance work of the political propagandists, is very serious indeed ; among the rich it is in the form of fashionable resorts to Spencer's, the local branch of which is conveniently situated in the heart of Saurashtra Madura. The working classes resort to the toddy shops. It is apprehended not without reason that even Saurashtra women-workers are getting addicted to this vicious habit. Forty per cent of the rich are believed to resort to the fashionable ways of drinking ; 30% of the middle class frequent the tavern in the evenings ; and above 66% of the working classes go to the toddy shops. It is but poor consolation to mention that these people never drink to excess.

How to account for such a high percentage of drinking ? How is it that the evil is more prevalent among the dyers than among the weavers ? The bleaching and mordanting processes in dyeing, especially the *oppressing* work in caustic lime, are so enervating that a substantial meal and the temporary effects of drink are believed to contribute to sustained work. This was accepted by more than 12 witnesses questioned in different localities. It is highly regrettable that a not negligible portion of this community understand the substantial meal to mean meat. Though the number of working individuals is very high, the percentage of drink is highest among this class. The middle class, as everywhere else, constitutes the sober section. The rich delude themselves into the comfortable satisfaction that they do not resort to the tavern. If a few annas are spent by their poorer brethren, bills in invariably two digits are debited every day at Spencer's against their accounts.

The good work done by the volunteers of the Saurashtra Varnashrama Sabha needs to be urgently revived. In such spheres of moral reform, only men of character and high repute can achieve tangible success. The Saurashtra Sabha, which has more than three lakhs of Rupees to its credit, should take up this question urgently since the evil can be rooted out only through the formation of effective public opinion against this pernicious habit.

Through the heart of the Saurashtra quarters flows the Anuppanadi gutter. It runs through the Lakshmipuram and Kanpalayam, along both sides of which there are houses of weavers and dyers. Besides this abominable stink emitted by this channel, the habit of this community forces on one the conclusion that it has no sanitary conscience.

The epidemic of cholera is a recurring factor in the city while fever with its high claims is only a bad second. The following years are noted for the prevalence of cholera at Madura : 1815, 1818, 1819, 1820, 1831 to 1837, 1839, 1843, 1850 to 1852, 1858, 1859, 1861, 1864 and 1865. The worst years have been 1875, 1877, 1891, 1897, 1900. Till 1912 figures are available. The present writer knows personally that from 1916 to 1922 not one year was free from the raging of this dire disease. Further, during 1920-1921, Madura had 772 deaths due to Plague out of a total Municipal plague mortality* of 4971 in the Presidency. The highest tolls have always been from the Saurashtra quarter. Even a lay man is able to attribute this mostly to congestion and bad habits of lack of cleanliness. Among the ten workers' families examined, 8 are provided with no latrines; and there is an apology for the same in 2 others. Apart from the sanitary aspect of this state of things, the moral impression it leaves on one's mind is the more regrettable.

Further during festivals, the Saurashtras move in whole families to distant places like Alagarkoil†. They take their meals in the open and spend a few days and nights in such places. It has so coincided that Cholera rages virulently during such pilgrimages.

Too early maternity is a characteristic phenomenon in the Saurashtra household. Invariably the fourth day after puberty, the nuptials is celebrated. At 14 or 15 the Saurashtra women become mothers of even more than two children. Thus they fall an easy prey to diseases.

But as chance would have it, most of the

* *Vide* G. O. No. 1544 L. & M. dated 31-8-1922. Page 9.
† A place of Pilgrimage, 10 miles north of Madura.

colours used by the dye-workers act as disinfectants. Most of the Alizarine and Aniline dyes contain coal-tar which is a disinfectant. Bleaching chemicals, as Caustic soda, also act as disinfectants.

The most necessary thing wanted in the community is a hygienic conscience. The appointment of a Health Officer alone will not constitute a panacea for this state of affairs. Important leaflets and pamphlets by health associations can do some good. The town-planning expert should not merely stop with the four Masi Streets and write eulogiuums about the beautiful and symmetrical planning of the City ; a detailed examination of the weavers' quarters and the houses of Saurashtras by a competent committee, may bring home to the minds of the Saurashtras the serious defects from a sanitary point of view. Above all, the educated public men of the community owe it to themselves to study this problem and find a solution for the same. A vigorous industrial community, without the knowledge of the elements of hygiene, is not a happy state of things ; writers are fond of iterating that Madura is going to become the "Manchester of South India" ; but the sanitation of the Saurashtra Madura, not to speak of other localities, is a long, long way off the requisite standard.

CHAPTER XV.

Conclusion.

Canons of justice require the votary to lay stress on the valuable lessons of a study of the most enterprising community in Madura. The interesting story of how a foreign community was able not merely to settle in a strange land but contribute to the industrial greatness of Madura, should now be intelligible.

The first thing that strikes one about this community is their strong *esprit de corps*. A habit formed through political necessity has been intensified through the strange language, traditions and modes of the Southern people. Not merely in the great powers of industrial organization but also in the processes of weaving and dyeing, is the virtue of this trait traceable.

A remarkable lesson to the idling sisters of other communities is supplied by the Saurashtra women. She is an indispensable economic factor in the Saurashtra household. Her management of the household is a model for other communities.

It is rare to come across any other community where the number of idlers and wastrels is almost a negligible quantity. One will not be surprised if less than one per cent turn out to be idlers. *Every man, his business and business to every man*—may well be written as the motto of this community.

The inventive capacity of the Saurashtra worker in the dyeing and warping processes is not an accident. It is the result of the accumulated skill of ages, transmitted through the unbroken chain of heredity. Their close secrecy and imbibed aloofness from the Non-Saurashtra have enabled the community to retain their trade secrets among themselves.

The remarkable powers of adaptability in the Saurashtras are of value in an age when an one-sided education has not laid stress on the industrial side. How within five decades a community of weavers and dyers has attained a working capacity, if not proficiency, in goldsmithy, carpentry, house-masonry and blacksmithy, is full of lessons to caste-ridden communities.

Industrial efficiency alone is not everything. It will be difficult to find any other community so impervious to cultural appeals as the Saurashtras. Apart from translations of the Sanskrit epics, the community has no lasting literature to boast of in their language.

The results of this vital drawback are reflected in the enormity of the vice of drink. This is a serious blot in the community ; the fact of not drinking to excess can never stand even as a palliative against this internationally accepted blemish. No amount of sincere philanthropic work will be too much to wipe out of existence this fashionable vice.

Wanted a hygienic conscience,—may well be writ on the door of every Saurashtra household. The heavy toll of precious human lives for the three diseases of cholera, fever and small-pox is a high price that a businesslike community pays for ignorance.

Over 300 years and more have elapsed since the Saurashtras sought Madura as their refuge ; and though language, customs and traditions continue to act as unduly severe barriers, the broad-minded and intelligent in the community should seriously endeavour to arrive at better understanding with the other communities. The world is above all cemented together by the bond of mutual dependence.

Competition has many unlovely qualities, yet it compels powerful corporations to supply a well-considered and effective service in order to secure public support.—*Sir Joseph Flavel'e.*

Expansion of American Automobile Industry.

By Virgil Jordan.

The automobile industry has taken its place very near the top of the list of American industries. Its importance as an industry is so great and its growth has been so rapid that it has raised serious problems of first importance in American life. These problems are not purely industrial or economic but are in large part social and political. The American public is just beginning to awaken to the fact that it has on its hands a new factor which has suddenly developed in American life and to which it may be necessary to apply some kind of control from the point of view of social welfare. Heretofore the automobile and the automobile industry have been largely taken for granted without much question but each year the problems which they raise become more complex and pressing. The situation which is developing resembles in many respects that which confronted the American people soon after the period of great railroad expansion, when it became clear that the railroad industry was one marked by a great public interest and therefore needful of control.

According to the 1919 Census of Manufactures, the latest date for which complete figures are available, the automobile industry ranked third in the value of its products, turning out in that year products worth over three billions of dollars. Some idea of the growth and human importance of the automobile industry may be gathered from the fact that in 1899 there were only a little over two thousand wage-earners employed in the manufacture of automobiles. The industry then ranked forty-ninth among the fifty leading industries in regard to the number of wage-earners employed. By 1914 there were about one hundred twenty-seven thousand wage-earners in the industry, which ranked fourteenth in the number of wage-earners employed; and in 1919 there were three hundred forty-three thousand wage-earners employed and the industry ranked seventh in the list. In other words, the automobile industry increased over fifteen thousand per cent in the number of wage-earners employed between the years 1899 and 1919.

Last year over four million motor cars and trucks were produced in the United States, with a wholesale value of two and one-fourth billion dollars, while the exports of motor vehicles amounted to nearly two hundred millions in value. The total capital invested in the automobile industry at present is estimated at more than a billion and a half dollars and it pays out in wages and salaries nearly six hundred million dollars yearly. At the present time there are more than fifteen and one-half million automobiles registered in the United States, an increase of twenty per cent over last year. There are nearly thirteen and one-half million motor car owners, approximately one car to every seven persons, or nearly one car to every three persons gainfully employed in the United States.

Still the industry keeps on growing at an undiminished rate and there appears to be very little sign of any saturation point soon being reached. Automobiles are being turned out at the rate of more than three hundred thousand a month. Somewhat more than a million automobiles were scrapped during the year 1923, but aside from these replacements, it is evident that the market for automobiles is continually expanding and reaching down into lower levels of the wage-earning class.

This suggests one of the first of the problems that are emerging in connection with the automobile industry. Motor car owners are mainly in the group of those receiving fifteen hundred dollars a year or over, but there is a continual tendency for the expansion of the automobile industry to depend upon purchases by those near and even below this income level. The automobile ceases to be a luxury and becomes a kind of necessity to a larger and larger group of people. The number of automobiles owned by persons of low incomes is one of the outstanding features of the social picture in the United States to-day. To expand the automobile business on this basis means that the automobiles have to be bought more and more on the instalment plan. In other words, the industry is erected more and more on a spreading basis of credit. So long as wages remain high and other basic living costs do not continue to rise, there is a fairly safe basis for such expansion, but in the present industrial situation of the United States such an industsy is in a precarious position. The indications are that after election there will be a wide-spread deflation of American wages and, with rising prices of farm products and raw materials, basic living costs are likely to remain high or even to increase. In this event,

two things may happen : There may be either a great slump in the automobile market and a turning back of large numbers of cars purchased on the time-payment basis, or the American wage-earner of low income who has become accustomed to regarding his automobile as a necessity will lower his standard of living in other respects, reducing his expenditures for clothing and rents and so seriously affect the textile and clothing industries, and the whole real estate situation. On the other hand, if the credit basis of the automobile industry should be seriously shaken in this way and the automobile market reduced, it will have a serious effect on the whole group of metal industries which have come to depend in large part on the automobile industry for their prosperity. Moreover, since it is estimated that in 1923 there were employed, directly and indirectly, in the automobile industry slightly more than three million persons, a slump in the automobile industry would create a serious addition to the prevailing unemployment.

It is thus clear that the automobile industry has injected into American economic and social life a new and somewhat artificial factor, the stability of which is most important for other industries and for the general welfare. This is the most serious but not the only problem raised by the automobile industry. The second and important one is its effects upon rural life. It is estimated that farmers own and operate over four million motor cars besides some four hundred thousand motor trucks. Thirty per cent of the cars in the United States are on farms and in towns of under one thousand population. The automobile has undoubtedly in many respects had an adverse effect upon agricultural life. Not only has the farmer in many instances turned away from the production of corn, oats, wheat and hay and gone into dairying and the raising of poultry and vegetables, but in other ways the automobile has been an unfavourable influence in agricultural production. The farmer and his family have been drawn more and more into urban activities and have been led to give less concentrated attention to problems of production and upkeep on the farm. Surplus money has gone into the purchase of motor cars which formerly went for the maintenance of farm buildings and improvement of the land. The farmer spends more of his time in town which he can reach more easily than formerly. Moreover, he has to pay higher taxes for the maintenance of the good roads demanded by automobiles. The automobile has doubtless facilitated the drift of the population, especially the younger generation, from the farm to the city.

Against these adverse factors must be counted the influence of better transportation on the distribution of farm products. The use of the motor truck for short haul transportation, however, has in turn raised new questions for the railroad system of the United States. It is estimated that probably fifty per cent of the railroad trackage and twenty-four per cent of the equipment of American railroads are utilized for short haul transportation. This trackage and equipment handles six per cent of the gross tonnage and earns eleven per cent of the gross revenue. Of this sort of business the revenues cover only twenty-five per cent of the cost of service, the remaining seventy-five per cent being recouped in long haul shipments. With the growth of motor truck transportation, into which even some of the railroads themselves are going, this situation is rapidly being altered. Doubtless there will be a progressive abandonment of the many shorter railroad lines and a tendency to retard the development of improved means of handling short haul traffic by the railroads.

The worst feature of this situation, however, is in the fact that automobile and motor truck transportation is carried on largely at public expense. Railroads have to build and maintain their road beds but the roads on which motor trucks travel are supplied out of public funds. The motor truck, therefore, has an unfair advantage of the railroad. Furthermore the enormous wear and tear on the roads by heavy motor trucks puts an enormous burden on the public. This is perhaps one of the most serious problems raised by the automobile industry in the United States. It is estimated that the automobiles in the United States are operated on about three million miles of highway, for the building and maintenance of which in 1922 nearly nine hundred million dollars were expended. The various states are trying in various ways to shift some of the burden of road expenditures upon the automobile owners who use the roads. They have levied motor vehicle taxes and taxes on gasoline consumption in many States, but the total contributed to State Governments in 1923 from this source amounted to less than four hundred million dollars, or less than one-half of the cost of maintaining the roads.

This situation injects, naturally, a political issue into the automobile industry. The

industry is determined in its resistance to special taxation, whereas the railroads and the general public, on the other side, are continually pressing for legislation which will make the automobile industry bear a larger part of the burden and equalize the advantages of railroad and automobile transportation. Doubtless public sentiment is moving more and more toward higher taxation on the automobile. Maintenance and operation of motors will, therefore, in time be more expensive, but at the same time the cost of automobiles is being continuously reduced by improved method of manufacture.

Another side issue to this situation is that of traffic congestion, particularly in the cities. It becomes necessary for the cities to make greater expenditures for traffic regulation and for the maintenance of streets. Nevertheless, the traffic increases at such a rate that it is becoming a serious question in the larger cities as to how it can be handled. In some of the larger cities the use of an automobile for travelling about is no longer an asset but a disadvantage because of congestion. It is estimated that more than twenty-one per cent of the automobiles are in cities of over one hundred thousand population. The increasing concentration of automobiles in the larger cities raises the further question of storage space and the parking of cars on streets.

All of these problems are being precipitated by the vast and undiminished expansion of the automobile industry at a tremendous rate. It cannot be said that the public has been able so far to adjust itself to this gigantic industry and its problems. Unless such an adjustment is made, it is a great question whether the industry can expand in the future at as great a rate as it has in the past.

Indian Mercantile Marine.

By N. J. Shah, Ph.D. (London), F.S.S.,

Ratan Tata Professor of Indian Economics, Hindu University, Benares.

The problem of accelerating the industrial development of India has received serious and careful attention, in all its aspects, from the public, during the last decade with the result that the Indian public opinion, with the help of certain favourable circumstances, has been able to force the Government of India to give up the time-honoured *laissez-faire* policy and to accept a policy of encouraging the development of industries in India by means of various State devices. Inasmuch as a national mercantile marine is one of the factors that contribute to the industrial progress of a country, the question of developing an Indian mercantile marine is one of the important Indian economic problems of the present day which this Conference has been called upon to consider.

It was brought into prominence by a debate on the subject on the Indian Legislative Assembly in 1922 and the consequent appointment of the Indian Mercantile Marine Committee in 1923. In view of the fact that the policy of the foreign shipping companies, which at present supply most of the transport facilities to the sea-borne trade of India operates to the disadvantages of Indian industries, it is good that Indian public opinion has awakened to the necessity of developing an Indian mercantile marine. The postponement of this question would be detrimental to national interests. Such a subject ought to have been considered along with an all-round general scheme for encouraging industrial development of the country. But, unfortunately, the attempts in this direction have been usually half-hearted ; as for instance, the question of the Tariff policy was excluded from the scope of the enquiry of the Industrial Commission, 1916, the question of the mercantile marine or the shipping policy was not included in terms of reference to the Indian Fiscal Commission, the question of the inland-waterways has been left out by the Indian Mercantile Marine Committee, while as a matter of fact all of them ought to go together. However, the Report of the Mercantile Marine Committee published in 1924, is one of the very few of the Committee and Commission Reports which are national in tone and outlook. Its recommendations are, generally speaking, satisfactory in so far as they go, and are adequate for the purpose they are intended to serve. One may only wish that the Government would see its way to take effective and early action on the basis of these recommendations.

The Indian Shipping Industry.

Briefly stated the problem is this. While history bears an eloquent testimony to the past

greatness and prosperity of the Indian shipping industry, its present decline is nevertheless impressive. The proportion of the coastal trade carried in ships owned by Indians is comparatively small (10%), while the number of Indian ships which take part in the overseas trade is practically negligible (2%). The experience in modern ship-building in India is also very limited as to the number and size of ships. The trade of India has therefore practically become the monopoly of foreign shipping companies, especially the British shipping companies. They try to favour the interests of their own countries in the export and import trade of India, by giving preferential treatment to their national commercial houses engaged in the Indian trade, in matters of freight rates and shipping facilities. In other words, they encourage the present lines of Indian trade, *viz.*, export of raw materials and food-stuffs and import of manufactured goods. Rates have been so fixed as to press more heavily upon Indian goods conveyed from one Indian port to another than upon those conveyed between India and foreign countries. Such disparities more than neutralize the natural protection, which an industry might expect to receive in its own country by reason of the distance of foreign manufacturing centres. On the whole, the policy of the foreign shipping companies which encourage foreign interests is not only unfavourable to industrial development of the country but has also a danger that it may be manipulated in order to nullify the effects of the present protectionist policy, which is obviously detrimental to foreign interests. If nothing else, this alone ought to make every public man, interested in the economic progress of the country alive to the economic significance of the problem of an Indian Mercantile Marine.

The root cause of the whole trouble is the British shipping monopoly in India. The best remedy would be the development of an Indian Mercantile Marine. Whatever may have been the historical causes of the present backwardness of the Indian Shipping Industry, the condition which at present militates against the development of shipping enterprise by the people of this country is the strong position established in the Indian trade by certain British shipping companies which enables them to stamp out Indian competition by questionable means, such as, deadly rate wars, the Deferred Rebates System which secures perpetual loyalty of shippers and the discrimination against the "disloyal" shippers who are penalized in various ways. The Deferred Rebates System is thus obviously harmful to our economic interests and should therefore be abolished by law. Its legal prohibition would undoubtedly remove an important obstacle from the path of Indian shipping. Various other countries have also legislated definitely against the shipping monopoly and its weapons, Deferred Rebates System and rate-wars.

Grounds for Development.

There are also other important grounds on which the development of an Indian Mercantile Marine is desirable.

(*a*) It would lessen India's dependence upon foreign shipping companies which reduces her trade to utter helplessness in times of war, as for example, the shortage of shipping facilities during the war.

(*b*) Profits of freight rates variously estimated between 35 and 50 crores of rupees would be saved from going to foreigners.

(*c*) Shipping and ship-building would open new avenues of employment to Indians who at present experience a great difficulty in obtaining suitable and profitable employment.

(*d*) Instead of the unfavourable policy of the present foreign shipping companies an Indian Mercantile Marine can, by a suitable policy, encourage the special interest of Indian trade and industries.

(*e*) It will serve as a nucleus of a future Indian Navy and as a second line of defence.

With the favourable conditions such as geographical situation, extensive coast, natural harbours, sea-faring population, large traffic and suitable rivers, the Indian Mercantile Marine can be created and developed without insuperable difficulties, only if the artificial conditions which act against it are removed and shipping enterprise and ship-building skill are encouraged by proper means. Next to the abolition of artificial obstacle what is mainly wanted, is the policy that will stimulate enterprise and inspire confidence in the investing public.

With the double objects of securing the largest possible share of ocean commerce to national merchant fleet and of making the ocean traffic subservient to the interests of the production and commerce of the country, the State measures for the encouragement of shipping in other countries have taken one or more of the following main forms :—

(1) The navigation laws ;

(2) construction and navigation bounties ;

(3) postal subsidy ;

(4) admiralty subsidy ;
(5) reservation of coastal traffic for national ships ;
(6) cheap loans ;
(7) preferential railway-rates.

It is important to note that almost all the countries except Great Britain have reserved their coasting traffic to national vessels. In Great Britain, however, where there is no legal reservation, 99% of her coastal trade, is carried by British ships. The history of all the maritime countries in the world, from which Great Britain is not excluded, proves that State aid in one form or another has played a very important part in the development of a mercantile marine.

Training Facilities in India.

With this background, it would be now convenient to proceed to the recommendations of the Indian Mercantile Marine Committee. The Committee's recommendations are of three kinds. The first set of recommendations which are quite adequate and which therefore must be accepted *in toto*, refers to the provision of training facilities and of employment security for the Indian executive or deck officers and engineers for the mercantile marine. But the provision of training facilities, though by itself an important step, is not considered enough for the purpose in view. The second set of recommendations, therefore, refers to the gradual reservation of the Indian coastal trade for the ships which are owned, controlled and managed predominantly by Indians. With this object in view a License System has been proposed under which, only those ships of the existing British Lines which are not more than 25 years old, and which have been regularly engaged in the coastal trade for the year preceding the proposed legislation, and which are prepared to employ a certain number of Indian apprentices and to gradually Indianize their officers and engineers, are entitled to take part in the Indian coastal trade. All ships seeking admission after the legislation on the subject can only obtain licenses if they are registered in India and owned, controlled and managed largely by Indians, and if they comply with the conditions regarding apprentices and Indianization. In this connection the Committee has wisely said that it is not at present possible to make it a condition that the officers and engineers of the ships asking for licenses must be completely Indians. Of course, in the coastal trade regulation proposed by the Committee, sufficient provision has been made for the compulsory but gradual Indianization of the personnel. Nor has it been found possible to provide that all the ships applying for licenses, shall be built in India, for there is no modern ship-building on a large scale in India. Consequently the third set of recommendations refers to the measures for the encouragement of modern large scale of ship-building industry in India such as, construction bounties, and cheap Government loans subject to certain minor modifications. This scheme, on the whole, appears to be quite a practical one. The only question is whether the Government is going to give effect to it.

The Marine Committee's Proposals.

The Committee has quite rightly said that there is at present no necessity for recommending other forms of State aids than what they have actually advised in their report, for the purpose in view. However, they have taken care to recommend that if a sufficient number of Indian officers and engineers are available, and if the Indian success in coastal trade is proved, the question of Navigation Bounties to Indian ships in overseas trade should be favourably considered. The license system as proposed by the Committee would obviously take some time in developing the purely Indian Mercantile Marine. In order to facilitate its growth the Committee has proposed that the Government should, by means of a loan or with the help of private enterprises, buy off one of the existing British lines in Indian trade as a going concern and then should gradually transfer the same to some Indian companies which may come forward to purchase a successful concern like this. Another proposal to speed up the progress of a mercantile marine is that the ship-building industry on modern lines should be encouraged by pioneer ship yards laid down and run on account of the Government. This method will surely require the Government to find out large capital and will obviously take a long time to build a sufficient fleet for the coasting trade. The Committee, therefore, prefers the less costly method of purchasing ships out of India in the initial stage. It has been estimated that not more than 10 crores of rupees would be necessary for buying a number of steamers enough for the coastal trade. The License Scheme proposed by the Committee is slow but less expensive ; the other method of buying necessary ships out of India is quick but more expensive ; while the method of pioneer ship yards built and run on account of the Government makes the problem of capital still more difficult. Considered from any point of view,

the question is therefore one of finding sufficient capital for the purpose of developing a mercantile marine.

Confidence Wanted.

The view that Indian capital is shy for new undertakings is becoming out of date. The difficulty of finding Indian capital, which some years ago seemed to be quite a serious obstacle in the way of the industrial development of our country, seems to be vanishing gradually under the influence of new ideas bred of education, new banking facilities and a new national enthusiasm for the employment of capital in industries. Capital has always come forward for those enterprises which have proved successfully profitable and is, in fact, invariably coming forward even for the unfamiliar enterprises which are likely to prove profitable and which have been undertaken by tried and trustworthy directors. What is wanted is a policy which will inspire confidence in the owners of capital. What is lacking, therefore, now is more often the opportunity than the will. Again the possibility of attracting foreign capital under proper Government control should not be forgotten. Various other countries have also solved their difficulty about capital in its initial stage by the judicious introduction of foreign capital and have consequently reaped substantial advantages. The Government of India has in the past quite frequently and heavily borrowed foreign capital for various productive purposes; and there seems to be no reason why the Government should not do the same thing for developing a mercantile marine, for shipping is not less productive than railways.

On the whole, in view of several initial difficulties, India does not stand to lose anything, and it will gain immensely if it only adopts in the beginning the License system recommended by the Committee, combined with their proposals regarding the buying of a line of steamers from the present British shipping companies in Indian Trade, the gradual development of ship-building industry by construction bounties and cheap Government loans and if possible by Government pioneer ship-yards and training facilities. This will be quite sufficient at present for creating an Indian Mercantile Marine for the coasting trade; which may thereafter be encouraged to participate in the ocean trade of the country by various devices such as navigation bounties and other forms of subsidies.

Realities of Rural India.

By N. N. Gangulee, D.Sc.*

My firm conviction that the readjustment of the existing social and economic conditions in India is a necessary pre-requisite for her further political evolution has been challenged by some of my critical fellow-countrymen.

The critics who cry out "Give us Dominion Status and other things will be added unto us" fail to appreciate the fact that its success depends upon many conditions co-ordinate with the socio-economic life of the nation. Just as the political consciousness which animates the educated communities to-day is the result of certain fundamental changes in the educational and social systems of the country, brought about by Indian reformers at the middle of the nineteenth century, so it is now necessary to set free such forces as would furnish the necessary impetus towards the sure but slow process of democratic self-government in India. Before we can have our political ideas and ideals fulfilled, we must incorporate into our basic industry, which is agriculture, and also into the general social outlook such ingredients as would assist in the political evolution of the country.

To my mind, "the isolation of the poor" is the outstanding feature of the socio-economic life in India. While factors which tended to accelerate this had been so regulated in the past by organizations in the village communities that the disintegration of divergent social units was partially checked, with the development of external relations brought about by the establishment of Dutch and English companies this control was no longer possible; for, to quote Mr. Moreland, "almost throughout India the tendency was to reduce the reward of production to a point where it ceased to offer an adequate incentive, to attract brains and energy to the struggle for a share in what had been produced by others." That is, economic parasitism on one hand and the demands of a chaotic administration of the decaying Moghul Empire on the other robbed

* Part of an article published in the *Observer*.

the actual producer of substantial benefit derived from the opening of the external markets.

While settled government and administrative reforms helped to protect the interests of the producer, the process, culminating in the destruction of the companionship of classes, went on generation after generation. Thus, the existing differences among various groups, to which socio-religious traditions lent support, were rather intensified by the inevitable changes in economic relationships. All these factors—social, religious, educational, and economic—combined in creating cleavage between the semi-educated and an educated minority known as "Bhadroloke" and a densely ignorant majority spoken of by such contumelious terms as "Chasha" or "Chotaloka". The latter lost confidence in the educated class as a whole, and the evils resulting from this became a menace to the national life.

Foreseeing the danger that the normal growth of national life might be stunted and the possibility of Representative Government in India frustrated by allowing the process of the isolation of the poor to develop further, this apostle of the poor asked his countrymen to spin and to remove the sin of untouchability from the social system. Expounding this gospel of the spinning wheel, he recently said : "When a man spins he feels he has something in common with the starving Indian peasants. It is only when we feel in common and work in common for at least half an hour a day that we can realize the real lot of the millions of India."

While his emotional appeal followed by the discovery of certain obstructions in the current of our socio-economic life, resulted in adding fresh stimulus to the will to regeneration, it did not succeed in creating an organized enthusiasm in the country strong enough to execrise an appreciable influence over constructive politics. As a matter of fact, the resurgent spirit of India found in an alien Government the chief sources of destitution, and the conflict appeared to be a general revolt against the impact of the Western civilization. The true and deeper causes of unrest, however, lie in the existing maladjustments not only in the economic organizations, but in every sphere of life ; and the methods recommended by Mr. Gandhi failed to indicate any well-balanced, consistent and positive process of adjustments of which the country was in need.

The positive aspects of the Gandhi movement did not escape Mr. Das. Though an evangelist of Indian traditionalism, he felt that the inhibiting influences active beneath the life of the Indian peasantry must be checked. After his release from prison, he offered a non-political programme with the reconstruction of rural life as its essential feature. When the question of popularizing the Congress among the masses was being discussed, I ventured to suggest at an interview with Mr. Das that the establishment of a Provincial Congress Bank, designed after the Egyptian Agricultural Bank, would be the most effective means of impressing on the peasantry and village artisans the utility of a national organization. He agreed ; but the drift of ever-changing practical policy designed to wreck the constitution proved far too strong even for a man of his intellectual force. I cannot help thinking that his surrender to political demagogues was tragic. At any rate, it contributed no less to limit the freedom of action of a constructive mind. It is interesting, however, to note that in laying down the "honourable" terms for co-operation with the Government, Mr. Das asked for State-aid in raising a loan for village reconstruction.

The political parties as well as the Government of India are equally loud in professing that their ultimate concern must be the Indian peasant. And yet such facts as the rejection of the Orissa Tenancy Bill under the pressure from the landed interest, or the prevalence of numerous sources of oppression to which the Indian peasantry is left exposed, do not suggest that the educated classes have yet a settled plan for rural revitalization. The Government, on the other hand, cannot congratulate itself upon a policy which might have furnished sufficient evidence to justify its claim as the trustee of the people. Agriculture is the main industry of the country, but has it gained sufficient strength to cope with the pressure of new conditions arising out of the modern commercial impact ? As an instance of the consequences following upon many social and economic disabilities under which the Indian peasant has to labour, Mr. Machie's (I.C.S.) evidence, given before the Taxation Committee may be noted. He pointed out that a large proportion of the land in the Bombay Presidency had come into the possession of non-agricultural classes, such as moneylenders, through mortgages. As to the conditions of rural life, even a superficial inquiry shows that the Indian peasant, in many parts, is always on the verge of starvation.

Education in Bombay Presidency.

By "Academicus".

The Annual Report on Public Instruction in the Bombay Presidency for 1923-24 is, as usual, a full record of the progress of Education in it. During the year the number of recognized institutions increased from 13,269 to 13,512 or by 1.8 per cent. The number of pupils in recognized institutions was 947,051 —an increase of 35,399 or 3.9 per cent. Unrecognized institutions decreased by 150, and the number of pupils by 3,359; but these institutions are regarded by the Director as of "doubtful value". Eight per cent of the male population and 2.1 per cent of the female population were attending school, and taking the proportion of the population of school-going age at 15 per cent, it may be assumed that roughly half the boys and one-seventh of the girls in the Presidency were attending school. The cost of direction and inspection was 7.3 per cent of the total expenditure, which amounted to nearly 191¾ lakhs, primary education accounting for nearly 110½ lakhs of this amount. The total increase in expenditure over 1922-23 was nearly 18 lakhs. Compared with the pre-war year 1913-14 primary education shows an increased expenditure of 265 per cent and the expenditure on education generally from provincial revenues is now 2¾ times what it was ten years ago. The average cost of each pupil to Government has increased from Rs. 9-9-0 to Rs. 20-7-0, though the increase in the number of pupils in the recognized institutions is only 28 per cent.

Taking the figures of the last seven years, Bombay shows an increase of 29 per cent in the number of pupils compared with 9 per cent for the whole of India; and whereas in 1916-17 Bombay stood fourth in the list of Provinces as regards the proportion of boys attending school and second (with Madras) in the case of girls, by the end of 1922-23 Bombay had risen to the first place for both boys and girls. Moreover, statistics show that the expenditure in Bombay per head of the population is more than twice as much as the average for the whole of India.

The total cost of educating each pupil in a recognized institution in Bombay in 1922-23 was Rs. 34.2 towards which Government contributed Rs. 18.9. The average total cost of each pupil for the whole of India was only Rs. 23. While the total cost of educating each pupil rose by 62.1 per cent in Bombay, the average for the rest of India was only 46.5. As the main item of expenditure is the pay of teachers, this increase suggests that Bombay has recognized the higher cost of living due to the war to a greater extent than the rest of India. Another point mentioned by the Director of Public Instruction is that the density of population in Bombay is only 157 to the square mile, whereas in Madras it is 297, and in Bengal 608, the average for the whole of India being 226. It is far more difficult to provide schools for a scattered population, and this is one of the factors which has impeded the spread of education in Sind. For this reason the fact that Bombay has the largest number of children attending school in comparison with the population is all the more satisfactory.

While Bombay can show favourable figures in comparison with the rest of India, tables given in the report show clearly the unequal distribution of education, and particularly of secondary and higher education, for whereas in some communities practically every boy attends school and a large proportion proceeds to a secondary school, there are other classes in which we find millions who are almost illiterate.

Five resolutions dealing directly or indirectly with education were passed by the Legislative Council and effect has been given or is being given to them.

Indianization.

The strength of the educational services, that is, the Indian Educational Service, the Bombay Educational Service, and the Subordinate Educational Service, on 31st March 1924 was 1,472, including miscellaneous or special appointments in all the three branches. The total was 65 less than in the previous year mainly owing to further retrenchments in training institutions. In addition, there were 25,236 primary teachers in Government, Local Board and Municipal Schools. A table given in the report shows the extent to which the Indian Educational Service is being Indianized. Whereas in 1914 there were 32 Europeans in the I.E.S engaged in direction and inspection, High Schools, Arts Colleges and Special Colleges, and no Indians, in 1924 there were 29 Indians and 19 Europeans. Ten years ago the I.E.S. was purely European; but now less than one third of the posts are held by Europeans. In

the 6 posts in the administrative branch held by Europeans two are of a special nature—those of Inspector of European Schools and Inspector of Drawing and Craftwork, while one officer has been on deputation as the Provincial Secretary of the Boy Scouts Council. During 1923-24, all the Divisional Inspectors were Indians.

The University.

There were 16 Arts Colleges and 6 Professional Colleges affiliated to the Bombay University, in addition to the University School of Sociology and Economics. Four of the Arts Colleges are maintained by Indian States. The total number of students rose from 9,469 to 10,608 and the total expenditure of the University was over Rs. 4½ lakhs. The report discusses the statistics with regard to the examinations, one feature of which is the very small number of candidates who get First Class Honours. The remarks of the examiners continued to be rather depressing; but the Director points out that "the examiner is a human being and is apt to allow the badness of the bad answers to overshadow the merits of the few good ones". The English examiners for the M.A. degree complain of the tendency to "read books about books instead of the books themselves". The practical work for the B.Sc. examination was disappointing and the oral examination for the Commerce degree was said to reveal "a hopeless lack of interest in, and a general ignorance of, current events". In the final M.B.B.S. in Medicine the results were disappointing. Lack of information of the most elementary subjects was displayed due largely to want of application and absence of enthusiasm for knowledge. In Pathology and Bacteriology "the average student seems to be more concerned with remembering his bottles rather than the specimens contained therein". In Midwifery and Gynæcology the examiners were struck with "the utter helplessness of some of the candidates to meet the common requirements of obstetric practice, and their inability to gain knowledge by practical work and self-help". As regards Science, there were signs that the lukewarm attitude towards the teaching of science is slowly changing, and the influence of the younger men of high scientific qualifications and modern outlook is steadily increasing.

Arts Colleges.

The percentage of increase in the number of students in Arts Colleges in British Districts was nearly 15 per cent, a considerably higher rate of progress than in other educational institutions, the number of students being 6,334, and the total expenditure nearly 14½ lakhs, of which Government contributed over 30 per cent, fees amounting to 54 per cent. A table in the report gives the percentage of passes of students in the various colleges at the B.A. and B.Sc. examinations. The average for the B.A. was 61.39, Elphinstone College having the best record with 87 per cent. In the B.Sc. examination the Gujarat College had the best percentage as of the 6 students sent up all of them passed. The average for the University was 52.54. As a whole, discipline is reported to be satisfactory. The political fervour of the years 1917 to 1922 seems, according to the Principal of the Gujarat College, to have disappeared entirely. Dr. Paranjpye writes with reference to the Fergusson College that "it will take some time for the old atmosphere of hard study and hard play to be re-established. There is still too much wasting of time on trifles or on profitless discussions, but public opinion is reasserting itself that the proper duty of students in colleges is the acquisition of sound knowledge and the development of their character."

Under the section dealing with professional colleges it is mentioned that no graduates of the Poona Agricultural College have remained unemployed. Attention is drawn to the fact that the Secondary Training College is now a college affiliated to the University, open to all, within certain limits, rather than an institution for providing teachers for Government schools, and it will be possible in future to admit 30 to 40 students not already in Government service.

Secondary Education.

Perhaps the commonest criticism levelled against secondary education in this Presidency, and in India generally, is that it is directed mainly to preparing boys for admission to the Arts Colleges of the University, and that we are turning out large numbers of young men who are fit only to be clerks. "But", says the Director of Public Instruction, "it is by no means certain that there is any great demand for vocational education. In secondary schools commercial subjects have been included in the curriculum of the School Leaving Certificate Examination for many years, but the number of candidates taking those subjects is extremely small and it is generally reported that they are among the weaker students." Thus, out of 8,217 candidates for the School Leaving Certificate Examination in 1924 only 69 offered book-keeping and

commercial correspondence and only 2 appeared in manual training. There was steady progress made during the year in the teaching of science. Direct moral teaching which was introduced about 15 years ago has fallen into disuse as it was found to be uninteresting and of little value, but on the other hand activities which aim at indirect moral training, of which scouting is the most prominent, are being developed. An examination of the paragraphs of the report dealing with secondary education shows that it is spreading with considerable rapidity. The actual increase of pupils in the Anglo-Vernacular schools for boys amounted to 8 per cent in 1923-24 ; but the extension of schools and the growing desire for English education appears to have resulted in a lowering of the standard, and the problem of secondary education, in the opinion of the Director, really resolves itself into one of policy—whether extension or improvement should be aimed at.

Primary Education.

The summarized statistics show that the total number of primary schools increased by 192 or 1½ per cent to 12,555 and of pupils by 29,234 or 3.6 per cent to 833,864, the Southern and Bombay Division showing the greatest increase and Sind the lowest. The total cost of primary schools increased by about Rs. 9½ lakhs to over Rs. 166½ lakhs, while the cost to Government was over Rs. 110 lakhs. In boys' schools the cost per pupil in a Local Board School has increased from Rs. 17.8 to Rs. 18.1, towards which Government contributes about 90 per cent.

On an average over 60 per cent of the teachers are trained. One of the most serious problems of primary education is the "one-master-school". There may be 25 or 30 children in a village distributed among four or five standards. It is difficult to provide more than one teacher, and the question is how he is to divide his time between various standards. So far experiments in the "shift-system", whereby infants attend at one session and the rest of the school at another session, have not been very successful mainly because the villagers do not favour the system, partly because they fear that their children are not receiving sufficient schooling, and partly because the children are off their hands for a shorter period.

The total cost of girls' schools has increased from just under Rs. 25¾ lakhs to over Rs. 28¼ lakhs, the cost to Government being over Rs. 10 lakhs. The total number of girls attending primary schools was 166,503. The Educational Inspector, Southern Division, states that there is a general awakening among the masses to the need of primary education for girls, but, generally, the lower standard of primary education for girls as compared to that of boys is due chiefly to the social stigma which in many areas still attaches to the woman-teacher. "There are signs", says the report, "that things are improving in this direction. Real progress, however, cannot be made until educated Indian women like the late Mrs. Ramabai Ranade come forward in far larger numbers than at present to speak and to work on behalf of their country-women."

The report states that there is little progress among the general mass of the population ; for if 12½ per cent of the population is taken as of school-going age, we find that nearly 75 per cent of Brahman girls are attending primary schools, while among the depressed classes less than 2 per cent are doing so. Probably less than 5 per cent of the girls of the less advanced communities in rural areas are receiving any education.

Among the Parsis nearly 15 per cent of the females are attending school, and it would appear that every Parsi girl receives primary education and more than half go to secondary schools. Education of girls has made rapid strides among Brahmans, Prabhus, and a few other communities, and it is only by excluding these communities, whose total numbers are small, that a correct estimate can be arrived at of the progress which has been made among the bulk of the people. The total expenditure on institutions for girls was just under 40½ lakhs and the fact that only one-twelfth of the expenditure is met by fees suggests that the demand for the education of girls is not very great and the parents are not prepared to pay fees. In primary schools no fees are usually charged, and in secondary schools the rates are very much less than for boys.

Training of Teachers.

The number of Government training institutions for men fell from 17 to 13, and the number of pupils decreased from 1,428 to 980. The total expenditure decreased by more than 1¾ lakhs, the cost to Government being over 3½ lakhs. It was found that the distribution of trained teachers among the different districts was very unequal, some having as many as 90 per cent and others as few as 30 per cent ; and a scheme was worked out for a more equitable distribution. The Third Year's course was abolished, and it has been decided that

not less than 50 per cent of the teachers should be trained and not less than 15 per cent or more 30 per cent should hold the Second or Third Year certificate.

On the general question of the training of teachers the Director of Public Instruction remarks: "It is this divorce of the teaching from reality that accounts for much of the inefficiency and stagnation of which the Inspectors throughout the Presidency complain. The training institutions do their best to impress upon the students the fact that it is education by life and not education by books that they have got to aim at. But the environment of an average village teacher is all against him."

The institutions for women primary teachers number 19 and the pupils 808. There appears to be no difficulty in securing women as teachers for schools in large towns, but they refuse to serve elsewhere. There is little doubt that facilities for the training of women teachers, at any rate, in the Maratha districts, are excessive rather than inadequate. The training institutions for women, on the whole, are well-staffed, and their work is characterized by keenness and enthusiasm, and a desire for progress and improvement.

European Education.

There were 57 Europeans in Arts Colleges, an increase of 13 over the previous year. There were 9 boys' and 13 girls' European High Schools, and 9 boys' and 6 girls' Middle Schools which were attended by 3,601 European and 835 Indian pupils, the former showing a decrease of 208, and the latter an increase of 102. Nineteen per cent of the pupils in European Schools are Indians. There were 128 more European pupils in English-Teaching and Anglo-Vernacular Schools, and it is possible that parents are finding it more difficult to meet the comparatively high fees in European Schools, and some are compelled to send their children to English-Teaching Schools in which the fees are lower. "The eagerness with which well-to-do Indians apply for the admission of their children to European schools is a testimony of the value of the teaching and discipline of these schools", says the Director of Public Instruction.

Tea Culture in Assam.

By "Son of the Soil".

The Report of the Director of Agriculture, Assam, on tea culture in that province for the year 1924 states that the number of gardens during the year under report increased from 891 to 906. One new garden in Cachar, one in Goalpara, three in Darrang and eight in Lakhimpur were opened during the year. Two gardens in Sibsagar which were in previous years amalgamated with two other gardens became separate gardens during the year, one old abandoned garden in the Lakhimpur district was reopened and one old garden in the Cachar district was abandoned. Four gardens in the Kamrup district were not worked during the year.

The area under tea was 412,859 acres against 411,807 acres of the previous year. The area of new extensions amounted to 5,007 acres and that abandoned during the year amounted to 4,010 acres. The increase in area is due to the continued improvement in the market price. The area plucked was 397,057 acres against 392,605 acres and is 96 per cent of the area under tea against 95 per cent of the preceding year. The total area of land included in tea estates has been reported to be 1,538,960 acres against 1,505,745 acres of which about 27 per cent was actually under tea as in 1923.

The daily average number of persons employed in tea gardens during the year was 534,204 against 527,359 of the preceding year or an increase of 1 per cent, the permanent garden labour being 471,361, the permanent outside labour 25,745 and the temporary outside labour 37,098, against 471,652, 23,215 and 32,492 of 1923, respectively. The outside labour increased appreciably while the garden labour slightly decreased. The increase occurred in Kamrup, Darrang, Sibsagar, Lakhimpur and Sadiya Frontier Tract, but in almost all gardens the strength is not adequate to cope with the growing demand for labour. As in the preceding two years, new recruits are not available owing generally to the prosperity in the recruiting districts and to local demand for other industries. The incidence of area under tea on labour decreased from .78 acre per man in 1923 to .77 acre.

The year commenced with a severe drought

throughout the province adversely affecting the growth of tea, but in April the weather became seasonable which continued generally up to October. In November the rainfall was abnormally heavy, while in December there was practically no rain. On the whole, the year was not satisfactory for the crop. Red spider and mosquito blight damaged the crop in Cachar and Lakhimpur to a certain extent. In the Lakhimpur district a severe hailstorm also did some damage to the crop.

The total outturn of the province amounted to 236,053,069 lbs. of black tea and 1,100,040 lbs. of green tea against 236,248,161 lbs. and 1,352,290 lbs., respectively, showing a fall of nearly .2 per cent from that of 1923. The decrease is generally attributed to the unfavourable weather and the general shortage of labour. In the Darrang district severe blights of red spider and mosquito and collar-pruning in some gardens are stated to be the other causes of the decrease. Green tea was manufactured only in two gardens in the Sylhet district and one in Goalpara.

The figures given below show the outturn of manufactured tea per acre in each district for the last five years. The average outturn per acre for the province fell from that of previous year by 8 lbs :—

District.	Outturn of manufactured tea in lbs. per acre.				
	1920.	1921.	1922.	1923.	1924.
Cachar ..	536	371	468	535	487
Sylhet ..	561	367	443	564	524
Goalpara ..	365	307	314	330	375
Kamrup ..	280	223	176	286	267
Darrang ..	671	544	496	613	576
Nowgong ..	554	433	462	528	515
Sibsagar ..	555	513	512	592	614
Lakhimpur ..	699	569	640	722	752
Sadiya Frontier Tract ..	549	546	603	516	626
Balipara Frontier Tract ..	96	136	192	196	448
Average ..	597	434	516	605	597

The Secretary to the Indian Tea Association, Calcutta, has kindly furnished the following statistics of prices realized in London and Calcutta for the teas produced in the province :

Tea produced during the twelve months ending the 31st March.	Brahmaputra Valley.		Surma Valley.	
	Number of packages	Prices per lb.	Number of packages	Prices per lb.
		s. d.		*s. d.*
London sales finishing about 31st March, 1924.	954.427	1 7·03	332,151	1 4·62
		Rs. a. p.		Rs. a. p.
Calcutta sales finishing about 31st March, 1925.	259,473	1 0 8	167,535	0 14 9
Do. do. 1924.	237,189	0 15 10	193,050	0 13 11

The market continued to be very brisk for all sorts of tea and the prices obtained were higher than in previous year.

The demand for tea seed during the year was fair and would have been greater but for the shortage of labour.

The condition of the tea industry in this province continues to be very flourishing, but the shortage of labour for efficient working is a great handicap.

The idea that there is much of misdirected energy in the present educational system was expounded by Mr. William Vaughan, Headmaster of Rugby, at the British Association. He dwelt on the absurdity of encouraging an enormous number of boys and girls to one-sided intellectual development when neither the State nor themselves could derive happiness and usefulness from it. He pleaded that the educationists should recognize how truly educated were the many who had prematurely escaped definite influences of school like the agricultural labourer who, with his knowledge of and sympathy with animal life, his weather lore and his ability to drive a straight line with his plough, was better educated than many of the clerks who were completely immersed in the secondary school course to become skilled in figures and filing. He argued that what was needed was to teach how to break the spell of gold as a measure of happiness and choose truth and love of beauty instead of worldly material success.

The Trade Union Congress.

By B. Shiva Rao.*

Scarborough, September 9th.—The Trade Union Congress has been meeting here this week under circumstances which lend its session exceptional significance. The Labour Party has once been in office ; it is now the Opposition, and any day may come back. When it does come back, it is felt, it will not only assume office, but be in power as well. The Trade Union Congress is not the Labour Party, it is true. But it is the backbone of the Movement and its splendid organization is an asset of the greatest importance. On the decisions of the Congress depends the future, to a large extent, of the Party as a whole.

There are, it may be said, two factors, besides the general one mentioned above, why the proceedings of the Congress are regarded with anxiety this year, both by friends and foes. For weeks past the Conservative Press has persisted in propaganda against what it has termed the Red Plot ; for evidence, the shipping strike which has died down in England, though it has not yet completely fizzled out, has been seized upon. There has been a certain amount of timely (from the Tory point of view) nonsense about ebbing the British Empire from a Communist Conference at which Mr. Saklatwala—who never hesitates for a word, I hear, in his speeches, nor for an idea, if one may judge from reports—was the central figure. A big Red Plot has been built up by the Conservative imagination, in preparation, no doubt, for the next General Election. The discovery of another Zinovieff Letter on the eve of the polling day, would certainly damage their reputation for ingenuity; the preparations have to be more elaborate this time, to have any chance of success.

Some efforts, it must be admitted, have been made to push on Communist propaganda. Moscow would forfeit its claim for foresight if it did not see in the Trade Union Movement fine possibilities for strengthening its hold upon the British working classes. It probably looks upon, with amusement and some satisfaction, the advertisement given, free of cost, by *The Daily Mail*, *The Morning Post*, and other papers which devote columns every day to episodes, which, if they lack veracity, do not lack sensation. The most serious aspect of the situation is not the speeches or the shipping strike, or the talk (it is no more) of tampering with the loyalty of the troops. The success of the miners in compelling the Government into terms was as unexpected, even dramatic, as its implications are far-reaching. Nationalization of the industry in its worst form is Mr. Lloyd George's interpretation of the subsidy ; and that is an accurate description, though it comes with ill-grace from an ex-Premier who failed to give effect to an obvious solution during his term of office. The Government was unprepared for a strike, and retreated to a position which was assailable, but, at any rate, safe. It has obtained a respite of nine months of which one has already slipped away with the personnel of the Coal Commission just announced. The Commission will, of course, make a report in due course. But whether the Government will act upon it is quite another matter. It is not looking for a solution of the coal problem ; it is looking really for an escape from the policy of Nationalization of an industry to which Mr. Baldwin has unwittingly committed himself. From precedent to precedent is the typical English way of doing things. So coal may lead to railways, to land, in fact, to a policy of wholesale Nationalization.

This is not the only blunder of the Government. There is Mosul, about which Colonel Amery has been expressing himself with more vigour than discretion. It has cost the British Government £210 millions so far to keep King Feisul firm on his seat in Iraq (just now he is suffering from an admirably opportune illness necessitating a rest cure in one of the busiest parts of London) ; it will continue to cost the British Exchequer 4½ million extra every year to balance the budget in Iraq ; there is, without these liabilities, the menace of a war with Turkey as a result of Mosul being retained. There is, again, the rising tide of unemployment. Week by week, figures are published, swelling the list which already exceeds by far a million.

A way, then, must be found, a way out of the present position. The country is getting more and more restive at the terrible record of the Government. A series of blunders is not the ticket which will win an election. A slogan must be discovered in time, to stampede, when election day comes, the electorates into panic. "Red Designs from Moscow" is an

* With acknowledgments to *New India*.

impressive one; though, as one speaker remarked lately, it is the red of the radish variety, red on the surface, but white within. But if speeches can be quoted in support, and, still more, resolutions of the Trade Union Movement, the colour could be made to go deeper than the surface. Government by the Trade Union Congress or by Parliament would make a fine election cry. But unfortunately for the Conservatives, the Congress so far has refused to play into their hands. It has listened to some very strong and eloquent speeches on the desirability of arming the General Council with extensive powers, sufficient to call a strike on a National scale, but with the caution so characteristic of the race, has quietly turned back after looking for a while in the face of a revolutionary proposal. A certain amount of superficial satisfaction has been expressed in the Conservative Press, ill-concealing the chagrin at its failure to thicken the Red Plot.

The other factor, to which reference has been made at the beginning of this letter, arises within the movement and is not inseparable from an element of the personal. The "frigidity and neglect" with which some of the Members of the late Cabinet, including Mr. MacDonald, regarded the Headquarters of the Trade Union Movement, have possibly something to do with the desire expressed in some quarters for a separation between the Labour Party and the Trade Union Congress, between the industrial and the political life of the Movement.

So far, the rift has not occurred, and if the present temper of the Congress is any indication, it does not seem likely. Mr. MacDonald will listen to many unpalatable comments on his administration, observed, or rather hoped, one Tory paper. As a matter of fact, he was the recipient of a very remarkable ovation as he walked into the Congress this morning. The deliberations of the Congress are conducted with an ability and a resoluteness which argue well. There are many fine speakers among the delegates, but I cannot recall a single instance, in voting, of sense being sacrificed to rhetoric or impulse. The revolutionary is made of more ethereal stuff than the British working class has in its composition. A speech like that of Mr. Cook, who has come into prominence over the mining dispute, would probably turn the scales in his favour in an Indian Congress. But all that flood of real eloquence evokes from Mr. J. H. Thomas the dry remark that while eloquence is necessary, common-sense is also sometimes necessary, and the Congress, by its voting, showed that it viewed the position in the same light as Mr. Thomas.

It is a live movement, this Trade Union Congress, live in every part of it, conscious of its strength, but not losing its head over its recent victory in the mining dispute. To have compelled the Government to come to terms at the last moment is no small achievement. To have done so by the threat of a general strike would, arguably, point out the way "for marching from victory to victory," as an ardent votary of direct action put it yesterday. But the proposition for giving the General Council of the Congress the power to stop all industrial activity in the country at any chosen moment was carefully debated upon and examined in every aspect. The recent victory over the Government, the possibilities of its repetition in the future, on the one side; the autonomy of individual Trade Unions, the danger of direct action, on the other—voting went decisively in favour of the latter.

The fact is that the Movement has grown within the last hundred years. It has the traditions of a century-old movement, it can withstand shocks of disappointment and success. Victory will not turn its head, nor deflect it from its path. To such a movement, success may not come as quickly as the impatient may wish. But when it does, it will not be fleeting. Watching its proceedings, and having had both time and opportunity to see something of the precision and care with which all details have been attended to, I do not wonder at the influence which the Congress wields. Nor does it need a prophet to see that the future is with a Party with its "heads in the clouds", in the sense that it looks to ideals for inspiration, but with a perception keen enough to reach the solid ground.

Interesting researches have been carried out in the Department of General and Organic Chemistry, Indian Institute of Science, Bangalore. The superior quality of Indian coriander oil is reiterated. Dill-apiol removed Indian dill oil, approximates in constants to those of the European oils. Calamus oil distilled in Bangalore differed from the commercial oils. Waste-ginger from the Indian West Coast gave exceptionally high oil-yields. Bangalore vetivert oil distilled under reduced pressure is not necessarily laevo-rotatory as stated in "Allen". *Collitris rhomboidea* grown on the Nilgiris, gave an oil-yield nearing that of *C tasmanica*, which Baker and Smith considered superior as a perfumery oil-producing plant.

Colonial Economic Policy.

A correspondent writes to the *Times* on this subject of supreme interest :—Mr. Bruce, the Australian Prime Minister, is reported to have stated that the report of the Imperial Economic Committee marked the end of the first round of the fight for Imperial Preference.

This is an arresting statement, especially as it is clear that the Imperial Economic Committee felt itself debarred from making recommendations involving tariff preference. Leaving at least temporarily on one side "the many other suggestions which have from time to time been proposed for the purpose of stimulating Empire trade," the Committee has recommended what it describes as the "mobilization of the British Consumer" to prefer Home and Empire products to foreign goods. It proposes that this should be carried into effect by means of the identification of goods when offered for sale and by using for educational publicity a substantial proportion of the annual grant which the Government has promised.

The key to the Committee's own view of its recommendations in relation to Imperial preference can probably be found in paragraph 30 of the general report, the concluding sentence of which runs as follows :—

In providing facilities to enable a voluntary discrimination to be exercised by its citizens, the Government of the United Kingdom would be attempting to achieve by methods of freedom no more than other countries seek to compass by their customs tariffs.

It is of considerable interest to examine what it is that "other countries seek to compass by their customs tariffs" and how far they attain their end, and, also, to what extent the first report of the Imperial Economic Committee indicates a method whereby Empire trade may receive the stimulus which other countries render to their inter-colonial trade by means of tariffs.

A most valuable survey of foreign colonial tariff policies and their effects upon trade was made in 1922 by the United States Tariff Commission, and this survey was briefly summarized and some of its more striking examples brought up-to-date by Mr. F. L. McDougall in an appendix to his recently published book "Sheltered Markets".

Old System.

The principle underlying the old system of monopoly trading rights in colonial possessions was to ensure a supply of raw material for home industries or foodstuffs for home consumption. Modern colonial powers, while recognizing the impossibility of complete monopoly, aim at colonial development partly for the same reasons as in olden times—but in so far as their home market has become inadequate to absorb the output of their factories, they are finding a preferential policy of increasing importance in assuring to their manufacturers the lion's share of the markets in their colonies. The varying degree of tariff relationship existing between foreign colonies and their mother countries may be divided into three main categories :—

1. The policy of assimilation.
2. Preferential Policy.
3. The Open Door.

France (in most of her colonies), Japan (in Formosa and Korea), and the United States of America (in Porto Rico) have adopted the policy of assimilation, that is to say, the strongest form of economic liaison with their colonies. They apply their own fiscal system to their possessions—allowing their own goods free entry while foreign countries pay the full general tariff rates. The preferential tariff policy has been adopted by most colonial powers, but its degree of effectiveness varies greatly—it may approximate very closely to the "assimilated policy" or it may have very little to distinguish it from the "open door policy," which is that of free access for all countries.

An examination of the foreign colonial trade statistics under the operation of each of these policies throws a light on the success of foreign countries in increasing their share of colonial trade. Mr. McDougall has pointed out that an examination of the trade statistics of all these colonies indicates that as a general rule the share of the mother country in the imports of the colony concerned is greater if that colony is assimilated or has a close preferential agreement with the colonial power concerned, than if trade is carried on under the open door policy. Trade figures show, however, that whether a preferential system is in operation or not the colonial power has a substantially larger share of the trade of its dependencies than it has with other contiguous territories.

American Trade in Philippines.

As an illustration of the general effectiveness of a highly developed preferential policy

in ensuring a good market for the mother country, the trade statistics of the Philippines since their acquisition by the United States of America in 1898 may be quoted. In 1899 the United States of America's share of Philippine imports was 7 per cent ; in 1913 it was 50 per cent ; and in 1923 57.7 per cent.

The advantages that French manufacturing industry derives from French colonial preferential policy is shown by the large share of colonial imports supplied from France. In 1922 Madagascar obtained 72 per cent of its imports from France, while in the Mediterranean the differing French share of import trade was strikingly illustrated, Algeria obtaining 64 per cent of her supplies from France, whereas in Egypt less than 10 per cent was derived from that source.

All foreign countries reciprocate the advantages which they secure for their own products in the markets of their colonies by giving effective preferential treatment to colonial goods in their home markets, thus securing the acceptance of the scheme of economic relations by the colonial producer. When we turn from consideration of foreign examples to the British Empire, we find the manufactures of the United Kingdom supplying in a vast majority of cases the lion's share of the markets of the British Dominions and Colonies. This is secured to a certain extent through tariff preference, and also it should be frankly realized through other factors, such as sentiment, habit, established channels of communication, and of trade.

The history of Empire economic relations since the Imperial Economic Conference in 1923 makes it clear that the most important issue behind the present terms of reference of the Imperial Economic Committee is the necessity which successive British Governments have felt to provide some method whereby the Dominion and Colonial producer may receive advantages for his produce in British markets and thus be encouraged to preserve or strengthen the shelter provided for British goods in the Overseas Empire.

The Imperial Economic Committee, debarred from consideration of the proved tariff methods, appears to have felt itself forced to recommend a campaign to educate the British consumer as to the sound business reasons why he should support Empire products. This means, as several critics have already pointed out, throwing the onus of the successful development of Empire trade with all it means to Great Britain upon the shoulders of the public-spirited citizen. Provided, however, that the British Government accepts the unanimous report of the Committee, it is probable that Mr. Bruce is right in considering the issue of the report as a successful end of the first round of the present fight for Imperial Preference.

The Pillar of Delhi.

A London correspondent writes :—"The Iron and Steel Institute held its annual meeting recently at Birmingham, when an interesting paper was read giving an account of the results of an examination of ancient iron specimens found at Richborough and Folkestone. It was stated that the iron had resisted corrosion to a far greater extent than would be the case with material made to-day. The ancient industry apparently possessed knowledge which was not shared by the present generation of manufactures. Sir Robert Hadfield referred in this connection to an examination conducted at his works on iron from the famous pillar of Delhi which is reputed to be over 1,000 years old. He said that the analysis and tests to which the material had been subjected showed the iron to be a wonderful piece of work. It certainly had properties which enabled it to resist corrosion to a much greater extent than modern wrought iron. The piece which had been tested and of which photomicrographs had been taken was freer from 'inclusions' than any piece of iron that he had ever seen. He believed that it was the absence of 'inclusions' that enabled the metal to resist the tendency of most irons to corrode. It was a most remarkable fact that in spite of all the scientific advance which had been made in the metallurgical field the Pillar of Delhi was, as far as he could judge, a metal of much better quality than anything which could be produced to-day. He made that statement with a full sense of responsibility. Some of the secrets of metallurgy had died out. Professor Henry Louis could not accept this unadulterated pirase of ancient iron. He suggested that the Delhi Pillar had resisted corrosion owing to favourable climatic conditions." There are people who hold that the iron for this Pillar was got from Malavalli in Mysore.

Canadian Trade and Finance.

September 1st, 1925.—Because of the extremely important part which agriculture plays in the business life of Canada, September 1st might be regarded as the commencement of the Canadian business year. By this date, a large percentage of our crops has been harvested, and some idea can be formed of the cash returns which the farmers will receive. This year, the season is commencing under favourable auspices, and the prospects for Canadian business are the best we have had since 1919.

Crops in Ontario, Quebec and the Maritime Provinces are in general satisfactory. In the West, a wheat crop approximately 100,000,000 bushels larger than the preceding one is being harvested from an acreage only fractionally greater than that of 1924; and wheat prices are satisfactory. This crop will be of great assistance in reducing the farmers' debts, and will in addition go far towards restoring the purchasing power of the Western Provinces, whose inability to buy on a normal scale has contributed quite materially to the industrial depression of the East during the last few years.

The increased freight tonnage, which will result from large harvests and better business, will benefit the railroads and with them the country as a whole, because a large part of every dollar received by the transportation systems is spent in Canada for wages and material.

Because of the reduction in the United States wheat harvest this year, that country will have only a small surplus for export; in fact, after a comparatively short time, there will in all probability be no export surplus so far as the better grades of wheat are concerned. Wheat futures in Chicago are well above Winnipeg quotations, a situation which will assist the export business of Canadian millers, although it does not give them an overwhelming advantage because of the fact that favourably situated U.S. flour mills can import Canadian wheat to be milled in bond.

Foreign Trade.

We give below the figures of Canadian imports and exports for the four months ending July 1924 and 1925 respectively:

	1924	1925	Increase
	(Millions of Dollars)		
Exports ..	327	351	24
Imports ..	271	292	21
Excess Exports	56	59	3

Although foreign trade statistics for this period show the influence of a smaller grain crop in the West last season, exports of agricultural products being less than in the preceding year, exports of animals and their products and of forest products and minerals have increased by a substantial percentage. A favourable feature of these statistics is the increase in imports compared with last year. Declining imports, like declining bank loans, are an indication of slack business. In June and July of this year, the upward tendency of imports was very marked, the increase over the same months of 1924 being $18,000,000.

In the above remarks on the Canadian business outlook, we have stressed the favourable factors because in our opinion they justify the expectation of a material improvement in business as compared with the unsatisfactory period of 1923-1924. It would, however, be wrong to expect great prosperity from the results of one good season only. In the final analysis, the continued progress of this country depends on a reduction in taxation and an increase in immigration.

Agricultural Statistics.

In our Monthly Letter for July we referred in a general way to the important work being carried on by the Dominion Bureau of Statistics. In a country which depends on its farms for prosperity to the extent that we do in Canada, there is obviously no branch of statistical work more important than that which relates to agriculture, and we have thought it of interest to give a brief description of the main features of the organization which is responsible for the preparation of agricultural statistics—The Agricultural Branch of the Dominion Bureau of Statistics.

This Branch of the Dominion Bureau fulfils two main functions, *viz.*, (1) collection of the annual agricultural statistics of Canada, and (2) issue of reports on the condition of field crops during growth. In 1917, new plans were adopted for the collection of annual statistics of agriculture jointly by the Dominion and Provincial Governments, thus abolishing conflicting estimates that formerly prevailed and setting up an approved system afer the careful study of various alternative plans. The statistics of areas and live-stock are now collected jointly by the Dominion and Provincial authorities by means of cardboard schedules issued to the rural public school teachers and distributed by them to the farmers through

their children at school. The replies received form the basis for the estimation of totals according to the number of farms, as ascertained by the preceding census or in other ways. Since 1918, all the nine provinces, with modifications suited to provincial conditions, have annually co-operated, except that for the last two years the province of Quebec has withdrawn from the scheme, at least temporarily. In British Columbia the schedules are distributed through the mails and not through the rural schools. The estimates of total areas sown are the basic factor for estimating yields, which in the case of wheat, have become of supreme importance. The estimates, especially those finally established, are made in close accord with the Provincial Governments, so that identical figures are published by both authorities.

Of hardly less importance are the monthly crop reports during growth. These are compiled from the returns of a large corps of crop correspondents selected from practical farmers throughout Canada, who express conditions in numerical equivalents upon the system recommended by the International Institute of Agriculture, *viz.*, percentages of the annual average yield per acre for the preceding ten years. The reports are published monthly in Canada, and are also cabled to the Institute at Rome. This year the crop reporting service has been strengthened by the inclusion as crop correspondents of bank managers and railway station agents in the three Prairie Provinces.

The reports of the Division are issued to the press and others interested at dates and times fixed beforehand, and are permanently recorded in the Monthly Bulletin of Agricultural Statistics, in which also appears a considerable variety of other agricultural data. Of special interest to the business world are the estimates of the value of the field crops of Canada, published in November and January, as well as annual estimates of total agricultural revenue and wealth, which are published in the March issue.

Sugar.

The recovery of agriculture in Europe, after the war period during which high prices had stimulated the production of foodstuffs in the outside world, has naturally been a very disturbing factor in various commodity markets. Wheat is one example. For some time after the collapse of 1920-21, as European countries increased their production, while at the same time good sized crops were harvested in North America, wheat was forced to an excessively low price, from which it recovered only last year. The situation in the sugar market was not quite the same. After selling in 1921 well below its pre-war price, sugar commenced to recover in 1922, and in the two succeeding years this commodity sold at a very good average price. In 1925, because of a 3,400,000 ton increase in production, sugar prices have declined to an abnormally low level, the present quotation of 2⅝ cents for Cuban sugar, cost and freight New York, being somewhat below the average price for the ten years preceding the war. In considering this fact it should be borne in mind that the general average of commodity prices is nearly 60% over the pre-war figures.

A summary of the world's sugar production figures is given below. Figures prior to 1924-25 are from Willett & Gray :

	Europe	Cuba	Total all Countries
	(*In thousands of long tons*)		
1912-13 ..	8318	2428	18243
1921-22 ..	3983	3996	17615
1922-23 ..	4574	3602	18119
1923-24 ..	5057	4066	19699
1924-25 ..	7175	5150	23100

Although the world was able to absorb at satisfactory prices the increased production of the years 1922, 1923 and 1924, the large increase in 1925 broke the market. Consumption has increased, especially in Europe, with the result that this season's bumper crop has been taken care of surprisingly well. Visible stocks in the principal sugar producing and consuming countries of the world in June were only some 893,000 tons larger than those of the year before, although production in these countries increased 2,924,000 tons (statistics published by Farr & Company, New York). Cuban exports for the 1924-25 season to August 15th were 3,583,000 tons, an increase of 514,000 tons over the same period of the preceding year. Eighty-six per cent of the increased exports has gone to countries other than the United States.

In view of this satisfactory absorption of the large 1924-25 world crop, the sugar market would undoubtedly have recovered somewhat before now, if it were not for the fact that the outlook is for another large harvest next season. European sowings of beet roots are only fractionally larger than those for the 1924-25 crop, but Cuba may again increase her production of sugar, if weather conditions continue favourable, and in Java also an increase is expected. Under the best conditions, however, the world crop of 1925-26 cannot exceed that of the present season by more than a

small percentage, while aided by improved economic conditions in Europe and moderate prices for sugar, more than a normal increase in consumption can be expected. Present prices for sugar are not profitable to either European or Cuban producers and may well serve to reduce the size of the 1926-27 crop ; in Cuba, where cane is planted eighteen months in advance of the harvest, it is already evident that the present discouraging market situation is having the effect of restricting new plantings.

During the readjustment of the world sugar industry to peace time conditions, there has been a succession of violent movements in the sugar market, as prices have gone from one extreme to the other. The movement in 1925 was in the direction of excessively low quotations ; it is only a question of time before the pendulum will swing in the opposite direction.

Conditions in Other Countries.

During the last few months, reports on the business and financial situation in the leading European countries have often been of a somewhat depressing character, and have not indicated that satisfactory progress is being made towards the restoration of normal conditions. In spite of any surface indications to the contrary, however, we believe that continued progress is being made. The troubles which various countries are now encountering are a logical sequence to the events of the last ten years ; and the sooner such difficulties present themselves and are overcome, the sooner will business be placed on a secure foundation.

France.

In France, for example, the complicated situation of the Government finances is a matter of grave concern. Deficits in the budgets of the belligerent countries were the order of the day during the war period, but in France large deficits continued long after the cessation of hostilities. It is only comparatively recently that receipts and expenditures have come close to a balance, and that a surplus is hoped for. For the purpose of the present article, it is unnecessary to analyse the reasons for these post-war deficits. It is sufficient to say that as a result of the expenditures of the last ten years, France has accumulated a tremendous public debt, bank note issues are many times larger than they were in 1914, and the franc has depreciated to less than a quarter of its pre-war value in terms of gold. France has now decided that a halt must be called. Under the direction of a new Minister of Finance, efforts are being made to balance the budget and stabilize the franc. The task is no easy one, but there is no reason whatever to doubt that France is capable of carrying it out successfully, if she sets herself to do so with sufficient determination. It is highly desirable that the franc should be devaluated and stabilized at a new gold par in the neighbourhood of its present value, since lack of confidence in a currency leads to transfers of funds abroad and undoubtedly tends to undermine the financial situation of the country concerned. If the risk of depreciation is removed and confidence restored, the money flows back, government financing is made easier and interest rates tend to decline, an exceptionally important consideration for France, since over 18 billion francs is devoted to the service of the public debt out of a total budget of 33 billion francs. Under sound money conditions it is not inconceivable that these interest charges might be reduced 25 per cent, an amount equivalent at present exchange rates to over $200,000,000, or more than three times the annual payment which Great Britain is understood to be requesting from France on account of her war indebtedness.

A financial house-cleaning on the part of France would have a favourable influence on other European nations. For a long time past, we have advocated a return to the gold standard by the leading commercial countries of the world. A great many countries have by now taken this step, and only in Great Britain has it aroused any volume of criticism because of temporary industrial difficulties in which that country finds itself. To this situation we shall refer below. The stabilization of the French and Belgian francs and the Italian lira, at a figure not far removed from their present quotation in terms of gold, coupled with conservative financial programmes on the part of the Governments concerned, would set a seal to the great volume of work which has already been done towards the restoration of normal economic conditions throughout Europe, and clear the way for a return to pre-war prosperity. Any development along these lines can, therefore, be regarded as highly favourable.

Great Britain.

Industrial conditions in Great Britain, following on the resumption of gold payments, have tended to become worse. The case of Great Britain differs from that of France, Italy and Belgium. It is not suggested that it would be

advisable for the last three countries to stabilize at a level out of line with their currencies' present purchasing power in terms of gold. Great Britain, however, in order to secure the lasting advantages of restoring the pound sterling to the gold value at which it had figured in international trade and finance for nearly a century before the war, had to pay the price of a temporary set-back to trade. The rise in the exchange value of the pound sterling tended to make British goods more expensive for importers in other countries ; and this was only partially compensated for by the price level of British exports remaining unchanged while gold prices rose. Wages in Great Britain have in general remained stationary, with the result that many British manufacturers are handicapped in selling to foreign markets. The solution to this situation will be found either in a reduction in the rate of wages or an increase in the output per head. Most authorities agree that with the removal of certain trade union restrictions and the employment of more efficient methods of production, increased output per head is possible and this would certainly be the most satisfactory way in which Great Britain's problems could be settled. Adjustments of this nature, however, are rendered more difficult by the fact that the prices of various important foodstuffs, which were until recently excessively low, have come back to a more normal figure, thus increasing the cost of living. It is a hard thing to explain to the workers that unless the government had increased the exchange value of the pound by resuming gold payments, their cost of living would have been higher than it actually is to-day, and their real wages less.

Against these troubles must be set the inestimable advantage of a gold standard to the financial organization of the country. Great Britain was seriously endangering her position as an international banker by failing to stabilize her currency. While the financial services which she performs do not result directly in the employment of labour on a large scale, they indirectly assist export trade, are the source of a substantial revenue in profits and commissions, and have had a great influence on the development of the foreign investments which have been a financial bulwark to Great Britain both in war and in peace.

Germany.

Each of the three leading countries in Europe is having its own particular problems to solve at the present moment. Whereas France has to find a way of putting a stop to inflation and Great Britain must adjust production costs to conform with the increased exchange value of the pound, Germany is still engaged in clearing up the wreck in which her affairs were left after her period of wild inflation. Many businesses built up during that period are proving unequal to the present situation ; the Stinnes Organization is but one of many that are disintegrating. The situation of the German public finances is, however, satisfactory and the reparations payments provided for by the Dawes Plan are being made. The shortage of working capital caused by the dissipation of a large part of the country's savings has been rendered less acute by an influx of foreign capital and the return of large amounts of German funds held abroad, but high interest rates indicate that the country is still having difficulty in financing its business requirements.

In general, it can be seen that the task of reconstruction in Europe is proving a much lengthier process than could have been anticipated at the close of the war, seven years ago. The main points to be remembered to-day are that inflation has practically ceased, and that most European countries are no longer endeavouring to postpone the solution of their industrial and financial problems. The movement towards normal conditions, though slow, is in the right direction, and a gradual improvement in European purchasing power can be expected from year to year. This is a feature which is of great practical interest to Canada.

As a direct result of the recommendations of the committee appointed by Lord Milner at the time when he was Secretary of State for the Colonies, an Imperial College of Tropical Agriculture has been established with headquarters at Trinidad. The British Government has given the College a grant of £15,000 and the Caribbean Colonies are contributing liberally to its support, thus assuring a permanent income of between £15,000 and £20,000 a year. The Colony of Trinidad has provided an ideal site of 84 acres in extent and a grant of £50,000, while, with the assistance of the Empire Cotton Growing Corporation, the British Cotton Growing Association and a few private contributors the College has been able to make an excellent start. There will be an instructional sugar factory, attached to the College, towards which the Sugar Machinery Engineers of Great Britain have contributed machinery to the value of £20,000.

Notes from U.S.A.

Life Insurance on Large Scale Planned by American Unions.

New York, 1st September 1925.—American labor is taking another leaf out of the book of capitalism, according to *The New York World*. The recent annual convention of the American Federation of Labor in one of its closing sessions opened a new avenue of approach, taking steps to go into life insurance as extensively as organized labor has already gone into banking. There are over thirty labor banks in the United States now, with resources of approximately $150,000,000. The millions that wage-earners have tied up in insurance for themselves and families has barely been touched in gathering deposits for these banks, the old-line life insurance companies keeping such funds in their own banks. Union labor in New York City contributes at least $20,000,000 in premiums annually to old-line life insurance companies. The remarkable success of the Locomotive Engineers' Bank in Cleveland was due to the $30,000,000 insurance funds the engineers had on hand that became available immediately for their bank when it was launched.

The present group insurance statutes in the United States, under which employers insure their employes as a group and without medical examination, permit the employer in industrial plants to pay the premium alone or jointly with his employes. But there are several drawbacks for workers in this insurance, as, for instance, that under participation clauses employers in ten years get back in dividends all the premiums they have paid, while the worker has the disadvantage of having to stick to his employment to keep the full benefit of his insurance. Several labor organizations, however, already have signed contracts with private casualty companies for group insurance covering their members. Some policies provide for additional insurance for the children and wives of members.

The Brotherhood of Electrical Workers, on the other hand, is blazing a new trail in having recently formed its own insurance company, which is now doing business in competition with old-line companies. It is known as the Union Co-operative Life Association and it will issue ordinary life policies, twenty-year endowment policies and policies on women and children, and old-age pensions. It is said by officers of the Brotherhood that "this is the first regular life insurance company to be organized by members of a labor union. With a total of $60,000,000,000 of insurance in force in America on the lives of 40,000,000 persons, and the business growing enormously, it presents a promising field to organized labor."

For more than forty years American unions have been insuring their own members as voluntary organizations, part of the union dues being set aside to provide for death and sick benefits, out of work insurance, replacement of lost or stolen tools. Even travelling benefits have been provided by one union for its members who go far in search of work. Unions of the American Federation of Labor paid out $2,000,000 last year in death benefits and about $600,000 in sick benefits alone, so the Federation, in making its decision to call a special conference to go into the matter of life and group insurance, can draw upon the experience of its own organizations and 3,000,000 members.

In any event it is another effort of labor to get control of the vast labor savings invested in insurance companies and gain what advantages can be derived from the investment and control of such funds.

A Remarkable Engineering Feat.

A remarkable feat of engineering has been accomplished in the construction of a new $1,000,000 addition to a large New York department store. A fourteen-storey structure has been erected inside the original building in the space previously devoted to a rotunda. The addition was built entirely through an eight-foot door, which was the only opening used for the introduction of steel beams, machinery and all of the other material used. While the work was in progress the large business of store was carried on without interruption in the rest of the building. The addition adds a total of 56,000 square feet to the floor space of the establishment.

The American Farmer's Hard Lot.

Prospects are that the gross income from agricultural products in the United States for the crop year 1924-25 may reach approximately $12,000,000,000 compared with $11,500,000,000 in 1923-24 and $9,550,000,000 in 1921-22, says the Annual Report of the late Secretary of Agriculture, Henry C. Wallace. The Report declares that American agriculture is in the best position it has held since 1920. Prices of many crops are at the highest point in four

years, and costs of production have declined from the high point of the depression period. This year's harvest was in many respects the finest in five years. Though not the greatest in volume of products it was the best balanced and represented the best income. The showing of 1924, says the Report, brings agricultural prosperity nearer, although the improvement it represents has not yet lasted long enough to produce any marked betterment in the finances of the farmer. The total acreage in all crops in 1924 is estimated to have been about 370,000,000 acres. This was a decline of about 3,000,000 acres from the area planted in 1923 and a decline of 6,000,000 acres from the area planted in 1919, when the last census was taken.

In the main, says the Report, the year will bring increased income to the surplus grain-producing regions, to the Corn Belt, and possibly to the Cotton States. The tobacco, fruit, vegetable, and dairy-producing States probably will not contribute much to the estimated increase in the gross agricultural income of the year. The gross income from agricultural production in the United States for the crop year 1924-25 may be $500,000,000 more than that of last year. Returns on the estimated present value of farm capital from this income, if operating costs were not greater than those of the crop year of 1923-24, would amount to 3.8 per cent. This return, the Report notes, is much below the average return to other capital. It adds, moreover, that production costs for 1924-25 may turn out to be slightly greater than those for the preceding year. Nevertheless, the showing is declared gratifying when compared with that of the last few years.

Income from agriculture has not in any year since the price decline of 1920 sufficed to allow both a commercial return on capital and adequate rewards for the farmers' labor, risk, and management, the Report proceeds. Yet it has shown a gradual improvement in the last three years. In 1920-21, after deducting operating costs and a wage allowance for the farmers' labor, and before paying interest on debts, the net income on the current values of agricultural capital was only 0.6 per cent. It increased to 1.4 per cent in 1921-22. It made a further gain to 3.1 per cent in 1922-23 and 1923-24. The indicated further improvement to nearly 3.8 per cent for the present crop year thus represents a very substantial advance from the low point of the depression period. These returns, however, are made on a capital valuation that has been scaled down. Thus the real gain is not as large as the apparent gain.

The drop in the gross income of agriculture from $15,800,000,000 in 1919-20 to $9,550 millions in 1920-21, says the Report, roughly shows the extent of the disaster suffered by agriculture from the fall of prices. Similarly the improvement already cited in the gross income of the industry as a whole since 1920-21 measures the general betterment that has taken place. But rewards to actual farm-operators are said to indicate more nearly the position of the average farmer. Actual farm-operators, after paying interest on borrowed capital and rent on rented farms, may earn approximately 2 per cent on their own capital investment in the crop year 1924-25. This compares with a loss of 3.1 per cent on their capital investment in 1920-21, a loss of 1.4 per cent in 1921-22, and a profit of 1.5 per cent and 1.4 per cent in 1922-23 and 1923-24.

It is noted in the Report that farm-purchasing power, as measured by the quantity of things for which a definite amount of agricultural commodities can be exchanged, has improved somewhat in the last twelve months. Although the index number of prices paid to producers of 30 farm products was the same in September, 1924, as in September, 1923, the price-level of non-agricultural goods had declined. There was consequently an increase in purchasing power of farm products in terms of non-agricultural products. Thus in September, 1924, the ratio of farm prices to wholesale prices of non-agricultural goods was 82, compared with 78 in September of 1923. But while the average level of farm prices remained about the same there were important changes in prices of some products. Farm purchasing power in some localities has been materially increased by large yields of crops that have brought good prices.

The Tin Can in Commerce.

The growing importance of the tin can in the industries and commerce of the United States is illustrated by some recent governmental figures on the outturn of the establishments devoted to the canning and preserving industries and the distribution of their products throughout the world. The value of the canned food-stuffs passing through the ports of continental United States in 1923 was over 100 million dollars against about twenty-five million in the year preceding the war.

Even this 100 million dollars a year of the value of canned foodstuffs passing through

American ports is a trifle, says the Trade Record of The National City Bank of New York, when compared with the quantity produced for the use of the people of the United States. The total value of the outturn of the canning and preserving industry in the United States in 1919 exceeded a billion dollars, and was more than six times as great as that at the beginning of the century. This figure of $1,099,475,000 as the total value of the canned and preserved foods produced in the United States in 1919 includes the canned meats turned out by the great packing establishments, which are not usually included in the group engaged exclusively in the canning industry, but if we take the official figures of those distinctly organized as canning industries alone we find that the number of establishments jumped from 1,328 in 1889 to 4,280 in 1919, the capital employed from twenty-five million dollars to 378 million, wages paid from $7\frac{1}{2}$ million dollars per annum to sixty-six million, and the value of the outturn from fifty million dollars in 1889 to 628 million in 1919.

One point of especial interest in a study of this great industry is the fact that it adds to the permanent foodstuff supply of the country enormous quantities of natural products which would otherwise be lost unless promptly utilized. It was the enormous waste of fruits, vegetables, fish and meats becoming available at certain seasons of the year far in excess of the momentary consuming power of the community that led to the establishment of the canning and preserving industry. It is a little more than a century, says the Trade Record, since that distinguished Frenchman, Appert, gave to the world his invention for the process of hermetically sealing foods for future use especially at sea, and by 1820 the system had been put into practical use in England, the United States and other parts of the world.

The quantity of perishable food products now transformed into condition available for months and even years after its growth and at points thousands of miles distant from the place of production is beyond computation. The value of the food material used in the canning industries of the United States exclusive of that canned in the great meat packing establishments was in the single year 1919 over 400 million dollars, much by which no doubt would have been lost but for this process which their value at the moment of growth was rendered permanent by the art of sterilization and the use of the hermetically sealed can.

The American canning industry which developed on the eastern frontage of the country gradually extended to the Mississippi Valley which supplies much of the corn, vegetables and milk thus utilized, and then to the Pacific coast in the conservation of its enormous supplies of fruits, vegetables and fish. In fruits and vegetables alone the state of California supplied about one-half of the 248 million dollars worth of the outturn in 1921 ; in preserves and pickles the states of New York and Pennsylvania turned out about one-half of the 118 million dollars of output of the country. Canned goods exported go literally to every part of the world. The canned peaches exported in 1921 went to 100 different countries and colonies, the canned salmon to eighty-five, and canned beef to eighty countries and colonies distributed over every part of the world.

Hoover on Wastes in America.

"Elimination of national waste" is the keynote of the annual report of Herbert Hoover, Secretary of Commerce. "A definite constructive national program has been developed for the elimination of waste in our economic system," says Mr. Hoover. "The need is plain. The American standard of living is the product of high wages to producers and low prices to consumers. The road to national progress lies in increasing real wages through proportionately lower prices. The one and only way is to improve methods and processes and to eliminate waste.

"Just as twenty years ago we undertook nation-wide conservation of natural resources, so now we must undertake nation-wide elimination of waste. Regulation and laws are of but minor effect on these fundamental things. But by well-directed economic forces, by co-operation in the community, we can not only maintain American standards of living—we can raise them.

"We have the highest ingenuity and efficiency in the operation of our industry and commerce of any nation in the world. Yet our economic machine is far from perfect. Wastes are legion. There are wastes which arise from widespread unemployment during depressions, and from speculation and overproduction in booms ; wastes attributable to labor turnover and the stress of labor conflicts ; wastes due to intermittent and seasonal production, as in the coal and construction industries ; vast wastes from strictures in commerce, due to inadequate transportation, such as the

lack of sufficient terminals; wastes caused by excessive variations in products; wastes in materials arising from lack of efficient processes; wastes by fire; and wastes in human life."

Under the head of reducing housing costs Mr. Hoover says: "The high cost of housing construction brought to the front the necessity for the elimination of waste in that field as a contribution to lowering costs within the purchasing power of the community, and so maintaining activity. Aside from the work of the department upon the simplification of building materials, the division of building and housing was established to attack such problems as the development of uniform municipal building codes, the investigation of losses and wastes in financing home building, and the study of city and town zoning."

The report tells how the Department recently took the lead in an investigation of the tremendous "human and physical losses" due to traffic mishaps. A number of committees of representative men from all parts of the country have been at work on preliminary studies, and will make their reports to a national conference on street and highway safety to be held in Washington, December 15. A committee on statistics has already brought in a report indicating that the fatalities in 1923 were not less than 22,600.

In the section of the report dealing with trade associations Mr. Hoover says: "One of the most important agencies through which the elimination of waste may be promoted is the trade association. It is true that a small minority of these associations have been in the past used as cloaks for restraint of trade by such activities as open-price associations and other attempts to control distribution or prices. It is equally true that the vast majority of trade associations have no such purpose and do no such things. The dividing line, however, between what activities are in the public interest and what are not in the public interest is not to-day clearly defined either by the law or by court decision."

The Royal Agricultural Show.

London, August 15th, 1925.—The Royal Agricultural Show always contains a great deal to interest engineers, and this year's gathering at Chester was no exception. Of course, a number of agricultural implements and machines are standardized to such an extent that there is little room for novelty, but this does not apply to all the exhibits by any means.

Farm Machinery.

A name that springs at once to the mind when agricultural machinery is mentioned is that of Ransomes, Sims and Jefferies, Ltd., whose Works at Ipswich are responsible for a wide range of products. Amongst a representative display of machinery, this firm showed a small portable oil engine at Chester embodying several special features. It was a single-cylinder vertical engine of the "Wizard" type, but differed from the usual examples in the system of fuel injection employed. In this type the whole of the vapourization takes place in the cylinder, and ignition is entirely automatic. No magneto or hot bulb is employed, and the engine is started from cold on the same fuel as that on which it runs ordinarily, an advantage which will readily commend itself to prospective users.

A 20-30 h.p. portable steam engine of a type which has come into wide use on farms, both at home and overseas, was exhibited by the Sentinel Waggon Works, Ltd. One of the features of this engine is that the Super-Sentinel boiler with which it is fitted will give satisfactory results when using almost any kind of fuel. The chassis consists of two strong channel steel side members with an inset at one end to accommodate the fly wheels. At the front end there is a steel turnable and provision is made for haulage by tractor, horses or bullocks. It is claimed that some 50 per cent of the expense of an average day's working can be saved by the use of this unit compared with an oil engine unit of the same power.

Another interesting Sentinel exhibit was a six-wheeler, the trailer portion of which was specially designed for carrying pigs. The van consisted of two floors for the carrying of stock, the sides being built up of slats, covered inside with strong wire netting. A tarpaulin cover was supplied for use in bad weather, and the vehicle was particularly well ventilated and adapted for easy cleaning.

Concrete for Agricultural Purposes.

The occasion of the Show was used by the British Portland Cement Association to demonstrate the utility of concrete for agricultural purposes, and a very striking display was arranged. So permanent did the concrete exhibit, which included a complete range

of farm buildings, appear that it was suggested that the buildings should be preserved and embodied in a housing scheme for which the land has already been ear-marked.

The buildings had to be erected in a remarkably short time, and Ferrocrete, the new rapid-hardening cement, was used to speed up the work. A striking feature was a concrete silo, 35 feet high, which dominated the entire Show ground. Compressed air was employed to fill it with grain or fodder.

In view of the great importance of road construction to-day, particular interest was displayed in the section of road at the back of the stand. This was a length of an 18 ft. carriage way constructed with Ferrocrete, a cut-away portion revealing the reinforcement and showing, in the soil under the verges, concrete drain pipes.

In the Oil Field.

To trace the evolution of various types of machinery through the ages makes an interesting study, and it becomes the more intriguing when the subject is an appliance which, in some form or another, is used in every-day life. Such is the case of the pump, which as far back as 100 B.C. was used by Hero of Alexandria for forcing air into an organ. It is instructive to note that this particular example was a piston pump, although the basic invention of the present piston pump has been usually attributed to a far later date ; namely, 1654. During the seventeenth and eighteenth centuries steam engines made considerable progress and the work for which they were all primarily designed was the pumping of water. The name of G. & J. Weir is synonymous with pumps, for the products of the Glasgow firm are to be found in all parts of the world, playing a vital part in the development of industry. One of the best known types of Weir pump is the direct acting feed pump designed for the essential duty of boiler feeding, but the development of oil as fuel for steam boilers has created a great demand for a sound reliable steam pump for pumping the fuel and here again the Cathcart Works are well to the fore. Weir oil pumps may be said to be the products of an experience in dealing with oil fuel extending over the entire range of its acquisition to its final use. For instance, the oil pipe line stations of Burma and Persia are equipped with oil pumps of this make, while thousands have been supplied to the Royal Navy, various foreign navies and the merchants marine, for pumping oils ranging from the lightest to the heaviest and most viscous.

A Progressive Industry.

In those days of industrial depression it is encouraging to find instances where works are running at their normal capacity, as is the case with the leading manufacturers of brass and bronze. This state of affairs appears to be due to the return to the use of non-ferrous material instead of the cheaper but far less enduring iron or steel, and to the extended use of this class of metal made possible by improved alloys and methods of manufacture. Bitter experience has taught designers that it is, in most cases, false economy to substitute iron or steel for the more costly bronzes, as was done at the time of the trade slump some four years ago. It is, however, of the utmost importance that the non-ferrous metal should be of reliable origin as, for example, the various products of the Delta Metal Co., Ltd. Delta Bronze No. IV has again and again been proved to be far more economical than steel or iron owing to the ease with which it can be worked both hot and cold. It also offers far greater resistance to corrosion, both by liquids and gases.

The extrusion process introduced by the late Mr. Alexander Dick of the Delta Company has made it possible to produce long lengths of brass, bronze and copper of almost any onceivcable cross section, thus conferring a tremendous boon on engineers and architects alike.

British Radio Industry.

The British radio industry is doing a considerable amount of business overseas, both in the Empire and in foreign countries, and the leading manufacturers with associated companies and wide representation report a very satisfacrory state of affairs.

At the Exposition d'Arts Decoratifs held in Paris, Alfred Graham are showing a wonderful display of "Amplion" loud speakers, and the way in which they are associated with all sorts of receiving devices. Amplion loud speakers are there in all forms, varying from the miniature model of some nine inches high up to the "Gigantic" types which are only used for demonstrations where it is a question of thousands being able to hear reproduction distinctly and simultaneously.

In the Amplion Pavilion, too, is to be seen the outfit which was used recently in St. Peter's Cathedral at Rome for the purpose of amplifying the voice of His Holiness the Pope. The whole of the services on three successive Sundays, prayers, speech and music were perfectly reproduced to the many thousands of people assembled.

British Durability.

British productions have long enjoyed a name for strength and durability, but some of the treatment endured by Mullard radio valves seems to constitute something of a record in this direction.

Recently, while changing a cheap foreign valve for a Mullard, a wireless enthusiasts knocked the former very slightly against a projecting wire and broke the filament. A little later, he was unlucky enough to hit the Mullard valve with an iron which he was using to straighten out kinks in a wire, with the result that half a valve leg and practically the whole "pip" were broken. Notwithstanding this, the British product continued to function as well as before!

In another case two valves worked efficiently after being in a rubbish bonfire which had thoroughly blackened and distorted them, while in a third instance a worried owner found his entire set aside down on the floor, resting on the pips of the unbroken Mullard valves, despite the fact that it had crashed down from a table through a dog becoming entangled in the connecting wires.

The Mark of Quality.

It is becoming increasingly clear that radio users can only get the best results from their sets by purchasing the components from thoroughly reliable sources. The market to-day is flooded with cheap components which only result in disappointment to the user. Especially is this the case with variable condensers, many of which are badly designed and will not give the capacity stated.

On the other hand, the Sterling Square-Law condensers are highly specialized electrical instruments and typify the best in variable condenser manufacture. They are rigid in construction, the vanes are of hard brass and are equally spaced, the movement is smooth, whilst the special shape of the vanes gives a distribution of points on the scale corresponding to the differences in wave length of the stations received.

Economics in the West.

Power-Driven Plant for India.

London, 1st September 1925.—Sir Alfred Chatterton, late Director of Industries, Madras, draws attention, in a letter to *The Times*, to the belief (mentioned in Lord Reading's speech at the opening of the Legislative Assembly) that Indian agriculture must continue to depend on cattle for its motive power. He points out that larger units of power, than it is possible to obtain from the use of cattle, are essential to the efficient conduct of a number of agricultural operations, such as the lifting of water for irrigation, draining of water-logged land, deep ploughing, and the preparation of crops for the market, the most important of which is the crushing of sugarcane. As regards the first of these, he states that there are in India sixteen million acres irrigated by wells, but that there has been no increase in wells since the beginning of the century, not because of any lack of water, but because of the increased effective cost of cattle power. Many new wells have been sunk, but at least an equal number have been abandoned where the conditions rendered water lifting by cattle an uneconomic undertaking. As regards the last, he repeats the constantly emphasized fact that India grows, but—owing to wasteful methods of extraction with cattle-driven mills—does not produce enough sugar for her own needs, and imports from half to three-quarters of a million tons yearly. The recently created Departments of Industries have done a great deal to encourage the use of power-driven plant, and India now imports thousands of oil engines and hundreds of suction gas plants every year; but the cost of such machinery is a charge that only a few landowners can meet. A rapid increase in the wealth of India will simplify many of its political problems, and this, in Sir Alfred Chatterton's opinion, can only be brought about by a more extensive use of power and power-driven machinery; for which the most practical solution would be the standardization of plant. The motor trade has shown what can be done by mass production and the establishment of "service" stations: if the Indian authorities would prepare standard specifications, on which manufacturers could undertake mass production, there is little doubt that the result would be a remarkable increase in the use of mechanical appliances in India, with a corresponding increase in her wealth.

There have been several indications that

firms in the United States are alive to the great possibilities of India as a customer for machinery : and, as the United States have been the pioneer of mass production, it is not unlikely that American manufacturers will turn their attention to the problem, especially now that it has been stated by one who speaks with authority. Co-operation between the various Indian Governments and British manufacturers, and between the latter *inter se*, ought not to be impossible : and should result in retaining for Great Britain the very great field for the provision of agricultural machinery that undoubtedly exists in India.

Curative Properties of Drugs.

The manner in which drugs exercise their curative action has become in recent years a subject of a careful study, and the further this study is carried the more interesting are the conclusions arrived at. The subject was discussed at considerable length by Dr. Warrington Yorke at the annual general meeting of the Royal Society of Tropical Medicine and Hygiene. Dr. Yorke has been observing the progress of patients infected deliberately with malaria in order to cure them of general paralysis, and then cure of their malaria by quinine. He found that quite small doses of quinine given on a few occasions prevented relapses of malaria in all but 2 per cent of those treated. The war experience of malaria treatment was very much less favourable than this, and hence the question arose. In what manner does quinine exercise its curative effect ? At one time that question was answered invariably by the positive statement that quinine is a specific poison of the malaria parasite and cures the disease by killing the parasite. Were this a complete explanation it would follow that the bigger the dose of quinine the quicker and more complete must be the cure. But actual experience shows that, on the contrary, big doses are often less effective in the long run than small ones. Hence the idea has arisen that the influence of quinine is exerted indirectly rather than directly, and that the body itself plays a vital part in its own cure. Dr. Yorke stated :— "There is now almost overwhelming evidence that, within very broad limits, the amount of the daily dose of quinine, the length of time it is continued, and the manner of its administration do not exert any influence, either on whether or not a relapse occurs or on the time it will occur." Further, he pointed out that there is definite evidence that quinine in concentrations considerably greater than could ever occur in the blood stream did not *in vitro* destroy all malarial parasites. The conclusion would seem to be :—"After absorption by the human organism quinine is in some way modified by the body cells and thereby changed into a substance which is lethal to the malaria parasites." Thus this cure depends to some extent on the man himself, and any factor which reduces his power of self-help must reduce his hope of cure. "What these factors are," said Dr. Yorke, "we can only speculate, but they may well be deficient nutrition, ill-health due to extraneous causes, exhaustion and strain, repeated infection, and lastly, and possibly not least, overdosing with quinine."

Training for Journalism.

At the Conference of the Institute of Journalists at Cambridge in mail week Sir Robert Bruce, Editor of the "Glasgow Herald," was elected president for the coming year.

A discussion, in which several members of the University participated, took place on the subject of the training of journalists, especially through the medium of the Universities. Mr. Peaker (president of the institute), describing the scheme instituted by the University of London in consultation with the institute, said something like thirty journalists a year were turned out under it, and, curiously, more women than men were taking the course. If the University man was content to begin at the bottom of the ladder he might do very well, but too often he wanted to start three-parts of the way up because of his University education.

Mr. Moorhead, of the Appointments Board of Cambridge University, agreed, but said it was often difficult for a man at the end of his university training to undertake a further eighteen months' or two years' training before beginning to earn his living.

Sir Alfred Robbins described in eulogistic terms the working of the diploma in the Faculty of Journalism at the University of Missouri, and strongly recommended the example to English Universities.

Mr. Mossbacher said the main advice he received from editors when seeking a job on a newspaper was, "Don't go to a school of journalism."

Mr. Hidde, in thanking the members of the University for their contributions to the debate, expressed a doubt whether the openings in journalism for trained men were sufficient to justify the older Universities in establishing special courses for journalism.

Town Planning from the Air.

"The art of town planning has in these days become so important a factor in promoting mental and physical well-being that it is not surprising to find air pilots at work surveying congested areas," writes A. G. F. in the *Birmingham Post*.

"Perhaps in no way is the social usefulness of flying craft better demonstrated. Its adaptation to sciences and studies which have been slow of development for want of a breadth of view and a clarity of outlook only partly possible in the past may prove to be a movement of great value to our modern communities.

"This is due to the fact that the study of city extension and its attendant problems is a field in which the bird's eye view of the aerial observer is particularly useful. And when it is remembered that a city or a town with which, perhaps, one is thoroughly familiar on the ground is often unrecognizable at first glance from the air, it must be obvious that the freshness and the completeness of vision made possible air reconnaissance can scarcely fail to reveal by the solution to many of the town-planner's problems.

"It has often surprised the writer, in flying over various cities and large towns, to discover that the districts of them which one would have said to be the most congested and the least spacious are often, in fact, not so.

"One forms the habit, for example, of imagining that parks are relatively of far greater area than air observation will prove, and that main roads are comparatively straight when in reality they curve and twist.

"To go up in a machine over a big city is a revelation of one's real ignorance of that city's formation and territorial character, and the accidental discovery of this fact is probably the reason why airmen are being employed to carry out so much surveying and map-making nowadays."

A Wireless World.

A fantastic picture of a world run by wireless in the year 2025 A.D. is painted by Professor A. M. Low, noted educator, who predicts that light will be broadcast by wireless, all means of locomotion will be controlled by wireless, and women will at last dress logically in a one-piece hygienic suit, warmed by wireless.

In a book called "The Future" the professor indeed makes the world of a hundred years hence an attractive place in which to live, if simplicity of existence be our aim.

Power for all purposes, always on tap, is the happy aid which the housewives will have to combat the servant question, if one exists then. Wireless will lighten the burden of the business man and also that of the burglar, according to Professor Low. Signatures to cheques may be sent by wireless to the bank while the cashier watches by "television". Wireless will be equally helpful to the burglar, who will probably locate hidden valuables by portable radio surveying instruments and other electrical methods.

The average man of 2025 will be awakened by a radio alarm clock. He will take a few minutes of radio light treatment to keep fit and alert for the business day. Little time will be wasted in putting on his synthetic felt one-piece suit and his hat—the latter being worn almost continuously owing to the fact that baldness will be almost universal then.

At breakfast, which may come up by tube from a communal kitchen, a loud speaker will take the place of a morning paper, giving him all the news, while a "television" machine will replace the daily pictorial newspapers. He will then go to his office in his own car, which will be carried by an elevator to the door of his office. If he has to go anywhere on foot moving sidewalks will convey him without exertion, and automatic telephones will be everywhere and will get the right number all the time.

In the evening when a business man goes to the movies he will see half a dozen films being shown at the same time on the same screen. He will glance at the program and by setting his observation apparatus to the key number of the film he wishes to see, he will cut out all but that one. Then he will go home to his wireless bed, which will make sleep automatic.

Shot Proof Aeroplane Petrol Tanks.

An airplane gasoline tank that may be riddled by incendiary or explosive bullets without bursting into flames or even leaking, is the latest protective development in aviation. It comes from Vienna. The tank is of the usual metal type, but with an inner coating of recut composition. Supposedly the protective inner coating is made of those liquid gums with which automobile tires are painted to make them puncture proof. There is also, according to the patentee, a special mechanism inside the tank that can prevent the effects of explosion, either of bullets or of gas fumes.

According to the inventor, the inflammatory bullet upon entering the tank is immediately enveloped with a coating of some material that extinguishes the flame, and at

the same time prevents a phosphorus coated bullet from leaving a deposit.

In a test made by army men twenty bullets were fired through the experimental tank, which was filled half with gasoline and half with inflammable gas. The bullets were fired in a series of one explosive, one phosphorus and one solid, in rotation. After twenty shots with no bad result, the tank was set in an airplane, which then made an hour's flight, using only the gasoline from the perforated tank. No leak or fire occurred.

The invention is arousing great interest, as the figures of the World War taken from the German War Office show that 8 per cent of the planes brought down in flames had been ignited by phosphorus bullets or had caught fire from tank leaks.

Bombay Millowners and Lancashire.

The Bombay millowners are showing their dissatisfaction with Lord Reading's reply by authorizing their chairman, Mr. N. N. Wadia, to come to this country and discuss matters with the Manchester Chamber of Commerce and the textile trade unions with a view to joint action. This is a significant step, and it may be hoped that full and sympathetic consideration will be given by Lancashire interests to Mr. Wadia's representations. So far from offering opposition to the removal of the excise duty—an essentially bad form of taxation, being a tax on output and not on profits—Lancashire, given a *quid pro quo*, would welcome the removal of this old source of friction and Indian dissatisfaction. Obviously the scheme should include a substantial, if not indeed a corresponding, reduction of the 11 per cent import duty so far as it applies to British textile manufactures. This form of Imperial preference would bring Bombay and Lancashire together in the fight against Japanese competition, which has contributed so largely to the severe depression in the Indian cotton mill industry.

Indian Bank Dividends.

Most of the leading Indian exchange banks have now declared their interim dividends for the current year. In no case is a change being made. The National of India pays at the rate of 20 per cent per annum, free of tax, for the half-year ; the Mercantile of India's dividend is again 8 per cent less tax ; in the case of the Chartered Bank of India, Australia, and China the distribution continues to be at the rate of 14 per cent per annum, free of tax, while the Eastern Bank's dividend is again 4*s.* per share, or 4 per cent, less tax. Although the succession of good monsoons which India has enjoyed has brought a great measure of prosperity to the country, the exchange banks have experienced quiet conditions during the past six months. Interest rates in India during the recent shipping season did not rise to anything like such high levels as in the previous season, while high prices have continued to militate against expansion in the imports of Lancashire's textile products into India. But there had been no expectation that the members of this wealthy group of banks would find it necessary to make a reduction in their interim payments.

1924 Gold Output.

According to Messrs. S. Montagu & Company's weekly bullion letter, a revised estimate of the gold production for 1924 has been prepared by Mr. Joseph Kitchin, and is as follows :—

	£
Transvaal	40,800,000
Canada	6,500,000
Australasia	3,500,000
Rhodesia	2,700,000
India	1,800,000
West Africa	800,000
Total ..	56,100,000
Rest of world	24,400,000
Total ..	80,500,000

Mr. Kitchin anticipates a considerable increase in the output during 1925.

Japanese Competition.

The *Times* states that there is not the slightest doubt that both Lancashire's cotton textiles and those made in the mills of India have been hit by subsidized Japanese competition. According, however, to one who has just returned from Japan, after studying carefully the industrial and commercial position on the spot, this competition is likely to become less rather than more effective. It is understood that the policy of subsidizing exports is being seriously called into question. In addition—this is perhaps a more important factor still—labour is becoming better organized and is insisting on improved conditions and increased wages, with the result that costs of production are increasing. These tendencies will make the fight fairer for both Lancashire and India. Subsidized exports to India if continued, would, moreover, strengthen the demand of Bombay millowners for the imposition of a differential tariff.

Indian Economic Notes.

Report of External Capital Committee.

The Report of the External Capital Committee appointed by the Government to consider the question of the flow of capital into India from external sources has been published. The Committee hold that any general measure of discrimination against or penalizing foreign capital either by taxation or by control, would, so far from assisting the development of these resources or fostering the interests of the Indian investor, be definitely injurious to both, as they would impede the growth of new industries and restrict the transferability and consequently the market value of the holdings of the Indian investor. Discrimination would be feasible only where pecuniary assistance such as a bounty is granted to particular undertaking, discrimination to be by insistence of a rupee capital company providing facilities for the training of Indians and agreeing to a proportion of Indian directorates as the Government may prescribe.

Regarding the exploitation of mineral resources or wasting asset, no definite rule is prescribed and a concession to external capitalists will be granted only if it is in the interests of India. The Committee, however, emphasizes the need for the developing of the vast store of dormant capital awaiting development and suggests a preliminary survey by the Government without delay of the whole field of the banking organization and credit facilities of India. This survey is to be followed by a detailed examination by an expert committee of survey which will include the question of extending the banking facilities, evolving a comprehensive scheme of banking education for Indians, extending the Public Debt Office facilities to more important commercial centres, co-ordinated examination of machinery for the provision of credit to agriculture and to industry, either by direct Government assistance, or through industrial and co-operative banks, and the development of negotiable instruments.

Protective Duty on Imported Coal.

The following Press *communique* has been issued by the Secretary, Tariff Board :—In the Resolution of the Government of India in the Commerce Department No. 47-T (49), dated the 30th September, 1925, the Tariff Board were directed to examine the question whether a protective duty should be imposed on imported coal. Before the Board can settle their programme, fix dates for hearing evidence and invite the opinions of those interested, it is necessary that they should have before them a statement of the proposals they have to consider. In particular the amount of the protective duty considered necessary, ought to be specified, and it should be made clear whether it is desired that the duty should be applicable to all imported coal or only to the coal imported from a particular country or countries. The Board have invited the Indian Mining Federation to submit a statement of this kind and when they receive it the Board will publish it and invite those likely to be affected by the proposed duty to express their views on the subject. Meanwhile if any other bodies or persons, who are not members of the Mining Federation, desire to submit definite proposals to the Board, they should do so with the least possible delay. The Board hope to commence the hearing of the oral evidence in Calcutta in November.

Silk Weaving in Bengal.

The Government of Bengal has just sanctioned the establishment of a Silk Weaving Institute at Berhampore (Bengal) where arrangements will be made for the teaching of improved processes of silk rearing and dyeing including power weaving. The institute will provide for the training of thirty artisan students in one year's course, and twenty higher grade students in a two years' course. It is also proposed to make provision for the installation of a portable steam engine and boiler for the training of young men of the *bhadralog* class in the work of the power looms. The capital expenditure of this institute has been estimated at a sum of Rs. 26,000.

Ceylon's Economic Development.

His Excellency the Governor of Ceylon has appointed a commission to consider and report on the means of transport already existing and required to be established in the colony and to assist the Government to formulate a policy for encouraging the economic development of the Island by roads, railways and waterways. The commission will consist of the following gentlemen :—The Director of Public Works (chairman) ; the General Manager of the Ceylon Government Railway ; the Hon. Messrs. E. J. Hayward, A. C. G. Wijekoon, A. Canagaratnam and T. Y Wright ; Messrs . H. L. de Mel and C.

Evans ; Colonel T. G. Jayewardene and Mr. B. G. Meaden.

Swedish Match in India.

Particulars as to recent important acquisitions and development of the Swedish Match Company in India, Japan and China have been made public. Developments in India are progressing according to programme. The most important factory belonging to the Swedish Match Company is near Bombay, and commenced operations about a year ago. Output is gradually increasing, and the maximum should be reached by the end of the year. The Calcutta factory started to operate at the end of last year. Two smaller factories are in course of construction at Karachi and Madras. In addition, one factory has been acquired in Ceylon and four in Burma, all of which are being modernized and enlarged. While very large amounts have been, and are being, spent in these developments, manufacturing is proceeding in a satisfactory way, and the whole production can be sold at a good profit. For a considerable period negotiations have been going on in Japan and China with the Swedish Match Company and the International Match Corporation regarding the extension of the Swedish-American interests in the match industry of the Far East. These have resulted in three of the most important Japanese concerns joining the interests of the Swedish-American group, and it can now be considered that the Swedish Match Company holds a very strong position in the Japanese industry.

The Advisory Board of the Department of Industries, Government of Bengal, has recently considered a draft bill which the Government has prepared on the subject of State-aid to industries. The idea of the Government is to grant aid to new and nascent, as well as to various cottage industries in the province, and it is proposed to make the grants either in the shape of loans, or by taking up shares of the companies in the different industries. The Board has submitted this bill to the Government with some modifications and suggestions.

Mrs. Sarojini Naidu.

A Sketch of her Career.

Mrs. Sarojini Naidu, who has been elected to the Presidentship of the next session of the Indian National Congress, is an unique figure in Indian politics. She was born on the 13th February, 1879, in Hyderabad (Deccan). Her father, Dr. Aghorenath Chattopadhyoy, was a scholar and scientist of great eminence and his greatness of character and magnificence of soul won for him the love and veneration of every one who came in contact with him.

Mrs. Sarojini Naidu passed the Matriculation Examination when she was twelve and was sent to England where she studied for three years, first in London and then at Cambridge. Her health broke down in 1898, and she returned to Hyderabad after a short stay in Italy. In December of the same year, she married Dr. Naidu, breaking the bonds of caste—an act which needed uncommon courage in those early days.

"The Golden Threshold" was her first volume of published poems. It was followed by "The Bird of Time" and "The Broken Wing".

She was accorded in 1914 a fitting recognition of her genius in her election to the Royal Asiatic Society of Literature. There were not since the time of William IV a dozen women to whom this tribute was rendered.

Social work either for the uplift of women or by way of expounding great ideals to the young has always claimed Mrs. Sarojini Naidu's attention. In 1906 she addressed the Indian Social Conference at Calcutta in a speech of high literary quality and powerful eloquence. The late Mr. Gokhale acclaimed it as a piece of art and was so struck with it that he sought her friendship. The comradeship which was warm and cordial lasted right to the end of Mr. Gokhale's life. Mrs. Sarojini Naidu carried on her work of Social Reform by lecturing tours in wide tracts of India and while in England, she was the leading spirit of movements to help Indians in Europe. She helped to form the London Indian Association about 1914.

Mrs. Sarojini Naidu's political life began in 1913 with the speech she delivered at the Lucknow Session of the Moslem League. She spoke on Hindu-Moslem Unity and her fervid eloquence marked an epoch. The appeal went home with irresistible force and the more liberal orientation which followed was chiefly the fruit of her endeavours both in Lucknow and in India.

It was not, however, until 1915 that Mrs. Sarojini Naidu came within the Congress fold. She identified herself heart and soul with the demand for Swaraj. When after the return of Mr. Montagu, the centre of agitation was shifted to England, she was at her work again, charming her audiences with the rich rhythms of her prose and the cadences of her voice Her evidence before the Selbourne Committee on women's franchise was masterly presentation of facts and her memorandum was characterized by a grace of diction and felicity of sound, which, as Lord Selbourne said, "illuminated our prosaic literature with a poetic touch".

The year 1919 saw the Rowlatt legislation, the outrages in the Punjab and the rise of Mr. Gandhi. Mrs. Sarojini Naidu felt the humiliation and the dishonour of the Punjab as her own and threw herself wholeheartedly into the popular movement of moral resistance of unjust authority. She was always an admirer of Mr. Gandhi, but now she placed herself definitely under his lead and has since been one of the most powerful forces in the country.

The disabilities of Indians abroad have called forth some of her finest qualities of eloquence and leadership. She has condemned the racial arrogance and economic greed of the colonials in the most ruthless accents. But when she went to Africa she has triumphal tour and received the ovations, not of Indians only but of the Whites as well. She went not merely as the champion of the oppressed but as the ambassador of India and the symbol of her unique culture and imperishable civilization. Her superb oratory won for her a personal and her cause a moral triumph.

It was now that Sir Ashutosh Mukerjee invited her to inaugurate by a series of lectures on the ideals of Indian womanhood his endowment of the Kamala Lectures in the Calcutta University.

Mrs. Sarojini Naidu has been for more than ten years now in the forefront of politics, but she is not a politician. She has been in politics and yet out of it. She has been of a party and yet above it. She is in fact a most fascinating paradox. One so sensitive that "Pain or pleasure transported her and the whole of pain or pleasure might be held in a lover's cup or the imagined frown of a friend" cannot find in politics a genial environment. Nor can one who has had to do all her work hampered at every step by continual ill-health find pleasure in mere politics. Mrs. Sarojini Naidu understands her mission essentially as a poet. The needs of the national struggle, the sense of our disabilities, the passion for liberty have drawn her from her world of dreams. But she comes with a poet's vision and a poet's voice.

Britain's Export Trade.

There has recently been published a "Survey of Overseas Markets", the result of the labours of the Committee on Industry and Trade appointed by Mr. Ramsay MacDonald in July 1924. This volume affords interesting and valuable reading, as it examines each country in turn and sets out the principal factors affecting the development of British trade in that particular market. It is impossible in a short space to analyse its findings, and the Survey is worthy of being carefully studied by all interested in export trade. Briefly stated, the Committee's findings are to the effect that the adverse forces which still operate in overseas markets to retard the full recovery of British trade are in the main world-forces, which operate with equal intensity against the trade of other exporting countries. With minor local exceptions which do not appreciably affect the general situation, British trade, broadly speaking, is not at present suffering from adverse discrimination as compared with that of other exporting countries. Of the main forces with which British trade has to contend some are transitory, such as the instability of exchange, the dearth of capital, the impaired purchasing power and the general financial and economic weakness of our customers, following the War. The world is still poorer for the waste of war, and years of hard work will be necessary to re-establish its purchasing power ; but, given peace and political stability, there is no reason to doubt that recovery will take place. Other forces, however, like the growth of manufacture in the less industrially developed countries, undoubtedly represent permanent tendencies, with which traders must inevitably reckon in future, and to which it is, therefore, essential that they should strive with all their power to accommodate their outlook, their methods, and their organization.

Books in Brief.

Short Reviews of Recent Books.

Indian Currency and Exchange.

By H. L. Chablani, M.A., Economics Dept., Delhi University. Oxford University Press, London, Bombay and Madras.

At the present moment no book is more opportune, in our opinion, than this one, which is both comprehensive and full. The book is conveniently divided into two parts, the first dealing with the general principles of currency and exchange in their application to India and the second with the author's own views and conclusions on particular topics of currency and exchange relating to India. Mr. Chablani's statement of theory is not only accurate but also expository in character. It ought to prove helpful not only to the college student but also to lay readers, more especially to publicists in this country. An American once said that a dependency can have no "finance" or "currency" policy proper but that apart, there is no questioning the utility of possessing a good working knowledge of Indian policy such as it is—it may be, for instance, a policy of the subordinated type. The book ought to be specially helpful to those who desire to take an intelligent interest in the current problems of the country. Among the chapters included in this Part of the work are two dealing with Indian currency and exchange from 1914–19 and from 1920—1923, another on the gold exchange standard and a third in the Presidency Banks and the Imperial Bank of India. In Part II, we have the following subjects critically dealt with :—(*a*) The closure of the Mints, 1893 ; (*b*) a gold standard with gold as currency in internal circulation ; (*c*) stability of the Rupee in terms of purchasing power ; and (*d*) main defects and suggested remedies. The last of these is well worth careful study at the present moment. This chapter is most suggestive from every point of view and will, we have no doubt, be read with great interest. Mr. Chablani deserves to be congratulated on the calm and dispassionate spirit in which he approaches difficult controversial problems. Being handy, his publication ought to appeal to all interested in the currency and exchange problems of India.

The Commercial Side of Literature.

By Michael Joseph. Messrs. Hutchinson & Co., London.

We feel we must compliment Mr. Joseph on the production of this highly entertaining and none the less business-like book. It gives much valuable information on the art of how to make a business of book production. If books of this kind are a need in advanced England, they are a crying need in India, where people have scarcely any idea of what the commercial side of literary work means. Mr. Joseph deals with the subject in all its phases and the mere mention of the headings of his chapters will show what a comprehensive volume he has written :—The modern novel ; the book market ; author and publisher ; approaching publishers ; the Literary Agent ; contracts ; copyrights ; producing and marketing a book ; film and other rights ; the author and publicity ; and what publishers want. Mr. Joseph's vast knowledge of the publication business enables him to write in homely, yet informative, fashion on most of the topics he deals with. This is accordingly a book that should be in the hands of every author, and would-be author—a rather growing number in India just now.

How to Take the Chair.

By J. Rigg. Messrs. George Allen & Unwin Ltd., 40, Museum Street, London, W.C. Price 2*sh.* 6*d.*

This is a companion volume to the author's well-known little book *How to Conduct a Meeting.* Like that book, this one is based on Parliamentary Practice, but differs, as the author points out, essentially in certain respects. The present book goes into certain matters more in detail than in the older book and includes chapters on Miscellaneous Questions, Special Meetings and Meetings of Companies. The author's former publication met a felt want and the present one fills in the lacunæ and as such will be widely welcome to organized bodies and public companies needing instruction and information, in a handy little volume, on matters of vast importance to them. Mr. Rigg's knowledge of Parliamentary rules and practices is so great that he may be readily taken as a good and safe guide on the matters on which he writes. We cordially wish success to this little publication, which we have no doubt we will ourselves consult from time to time for many years to come. Meetings of every kind are the order of the day. The growth of democracy means an increase in public meetings and to conduct them chairmen should be well equipped. To them we would commend this little volume, which deserves the very widest publicity in this country.

India, America and World Brotherhood.

By J. T. Sunderland, M.A., D.D. Messrs. Ganesh & Co., Madras. Price Rs. 3.

There are few in this country who have not heard of Mr. Sunderland or his writings for many years past on India. An enlightened American, he writes as a confirmed democrat, using the word in no party sense. In this book, he gives us what great American names—great in American and Humanitarian history—stand for ; what he, an interested, but unbiassed onlooker, thinks of the movement for freedom in India and incidentally how it should be guided ; and finally what a world-wide brotherhood means and what is India's contribution to it. Each part of this book is written with spirit and good feeling, though his reflections on British rule in India may seem a little too strong at times. He, however, disarms criticism when he says : "I am not England's enemy. I am her friend. I want no wrong done to her in India. But also I want her to do no wrong to India." Mr. Sunderland does not lack knowledge of India and Indians—he has travelled in India on two occasions and has cultivated Indian friendship for some forty years—and so he need not be so apologetic as to his equipment for his self-appointed task. Mr. Sunderland's book deserves to be read for it records the views of a cultured American mind. It is an appeal as much to Englishmen as to Indians and therein consists its great utility.

Cause of Plague.

By Lieut.-Col. Glen Liston. 3rd Edition Reprint.

The Government of Bombay have reprinted the

third edition of Lieut.-Col. Glen Liston's pamphlet on "The Cause and Prevention of the Spread of Plague in India". Plague has been defined by the author as essentially a rat disease. The disease among men is said to be accidental and certainly avoidable if rats can be kept from association with man. The conclusions of the Plague Research Commission showed that man becomes infected through the agency of rat fleas which previously to biting him have fed upon infected rats. If there were no rats, there would be no plague and it is the association of rats with men which is the direct cause of epidemic plague. Such association depends partly on the habits of rats and partly on the manners and customs of the people. The author points out how the poorer type of Indian dwelling with unhewn stone plastered together with mud and maintained in constant disrepair favours the presence of the rats, while the country tiled roof affords them ample shelter. The habits of the people are still more important in producing and maintaining a close association between rats and men. Even the erection of well-built rat-proof buildings will not of itself stop the plague. Poverty and lack of general order and tidiness within the house, the habit of using the street as a depository for filth and refuse, the keeping of cows, goats and hens in or near houses, are some of the conditions which attract rats.

"From what has been said above it is obvious", says the pamphlet, "that measures which aim at decreasing the food supply and shelter afforded to rats will be of permanent value in the fight against plague. Such measures are concerned with the reforming of those manners, customs and modes of living of the people which afford shelter and a food supply for rats and bring about the association of rats with man. .....Too frequently in India dilapidated houses, often unoccupied, not only disfigure the towns and villages, but afford shelter to rats. Of permanent utility are measures which make places that are likely to harbour rats proof against these animals. Regulations which provide that dwellings should be kept apart from grain stores, godowns and stables, when carried out, are sure to lead to the permanent elimination of the plague. In most Indian towns and villages a better system for the collection and removal of house refuse is urgently needed. Above all an endeavour should be made to prohibit people from using the gullies and public streets as depositories for food refuse. The Health Departments in the cities should insist on tenants maintaining in a clean and tidy state not only their own rooms, but also the stairs and corridors of their dwellings. Housing Acts should be passed and rigidly enforced empowering the Health authorities to deal with these matters. The keeping of animals in dwelling houses should be strictly prohibited. Such reforms will take time to carry out, but a beginning must be made. Rules are of no use when they are framed so that they can be evaded. Action must be taken, the occasion demands it."

Other measures suggested are rat destruction, evacuation of infected places and inoculation. The effect of inoculation can be judged from the following figures :—

In certain villages of thePunjab there were 186,797 inoculated as compared with 639,630 uninoculated persons. Among the inoculated there were 314 deaths from plague. Among the uninoculated there were 29,723. From these figures it is easy to calculate that nearly 8,000 lives were saved in these villages by inoculation.

Quite as good, if not better, results have been obtained in Bombay City. In a chawl near Pilot Bunder inoculation was carried out two months before plague broke out in it. 61 persons lived in this chawl, and of these 24 had been inoculated. Only one of the 24 was attacked by plague and he recovered, while of the 37 uninoculated, 19 were attacked by the disease and 12 of them died. In this single building 12 lives were saved by inoculation.

The pamphlet, which is illustrated by photographs, can be had *gratis* from the Director of Bombay Bacteriological Laboratory, Parel, Bombay.

An Introduction to the Practice of Civil Engineering.

By E. E. Mann, M.Sc., A.M.I.C.E., Senior Lecturer in Engineering at the University College, Southampton. Messrs. Macmillan & Co., London and Madras.

Mr. Mann has done well in writing this thoroughly practical book. It deals with a branch of knowledge which is essential to the Engneering Assistant but taught only as something secondary to the teaching commonly imparted in our Engineering Schools and Colleges. Mr. Mann accordingly confines his book to specifications, quantities and estimates. In doing this, he has done a great service to students and to those others who have to learn much under these heads in a wholly desultory, haphazard fashion. We cannot recommend a better book to the student than this one. It is both compendious and full on the subject, yet not overloaded with matter. To show how up-to-date it is in its treatment of matter, we have only to refer to its chapter which is devoted to a general description of Civil Engineering Works of almost every type—Railways, Roads, Marine Works, Water Works, Sewage Works, Water Ways and Irrigation. There are many useful appendices and illustrations included in the book, which add to its value as a self-instructor in Civil Engineering. We have no doubt it will find its way into the Engineering institutions of this country.

Compensation for Occupational Diseases.

1 Vol. 8vo. 68 pp. Price 1s. or 25 cents (Post free). International Labour Office (Sales Branch), Geneva, Switzerland.

This volume is one of the technical reports prepared in view of the 1925 Session of the International Labour Conference. It comprises a brief study of the general problems of compensation for occupational diseases and an analysis of national laws which provide compensation under either the workmen's compensation or the sickness insurance systems, or again under special schemes. The scope of the report has been limited intentionally to the problems peculiar to occupational diseases : nature of risk, definition of occupational disease, responsibility of the employer. It has not been considered necessary to reproduce the provisions relating to the amount and nature of benefits, insurance institutions, and judicial authorities, which have been described already in the reports on compensation for industrial accidents and sickness insurance.

Compensation for Industrial Accidents.

8vo. 655 pp. Price 12/6 or Dol. 3.00 (Post free). International Labour Office (Sales Branch), Geneva.

This is another volume of the technical reports which was prepared in view of the 1925 Session of the

International Labour Conference. It contains a description of the whole workmen's compensation legislation existing at the end of 1924 (over 40 countries) except that of the United States and Mexico, which is treated in a separate volume. The study is divided into six parts, corresponding to the principal features of every workmen's compensation law, namely: scope, risks covered, compensation, guarantees, procedure and settlement of disputes and position of foreigners. The provisions of the different laws are then compared and classified, feature by features. A series of tables and summaries shows in schematic form for each country the legal provisions concerning each feature. In an appendix is given a list of the several hundred laws utilized in the preparation of the study.

The People.

Lala Lajpat Rai deserves to be congratulated on the production of this brightly written weekly. It is independent in outlook, frank in the expression of opinion, anfl though expressing sometimes ultra-radical views, generally moderate in tone. The articles published are of varied interest and ought to satisfy the large and growing clientele it is attracting to itself. A weekly is a difficult matter in India—for the writers are few and even these want a great deal of coaxing. The case with the *People* may prove different, for the Editor enjoys an international reputation and has friends in two Continents. At one time the *Indian Nation* of Calcutta was reckoned the best weekly published in this country and to-day we have besides the old established *Indian Social Reformer*, the *Servant of India* and the *Guardian* (of Calcutta), the *People*, to which we extend a hearty welcome. We wish our contemporary every success, both in the literary and the business lines.

Jayaji Pratap.

The bilingual Special Number of the *Jayaji Pratap* is, as usual, an excellent one. A coloured likeness of H. H. George Jivaji Rao Scindia forms the frontispiece to this issue. Among other notable illustrations appearing in the Number is one devoted to the entire Council of Regency, which, including Her Highness the Senior Maharani, numbers eleven persons. The account of the instailation of H. H. the young Maharajah is also well illustrated. We have no doubt the Number will be widely welcomed both in and out of the Gwalior State.

Mysore Economic Development Board.

Board of Agriculture.

The following is a summary of the Proceedings of the Fifth Meeting of the Board of Agriculture, held in the Chamber of the Second Member of Council on Wednesday, the 26th August 1925, at 8-30 A.M., with Mr. K. Chandy, Esq, B.A. (*Chairman*), in the Chair :—

I. *Programme of Work for the year* 1925-26.—A tentative programme of work for the year 1925-26, submitted by the Secretary, was the first item of the agenda taken up for consideration by the members, and after a discussion as to the different subjects that could be taken up for investigation and study by the Board during the year, and the personnel of the Sub-Committees which should be entrusted with subjects falling under different heads, the Board adopted the following resolutions :—

Resolution I.—Resolved that the programme of work and the constitution of the several Sub-Committees, as amended, be approved (*vide* Appendix).

Resolution II.—At the instance of the Chairman, it was resolved that the Conveners of the various Sub-Committees might be requested to prepare questionnaire on important subjects taken up for study with a view to obtain the opinions of suitable persons both from within and outside the State.

II. The propositions which had been brought up by some of the members of the Board for being moved at the last annual session of the Economic Conference were taken up one by one for consideration and suitable resolutions passed :—

(1) "In the interests of Horticultural Improvement in the State, this Conference recommends that steps be taken (*a*) to start a Central Fruit Nursery in Bangalore at an initial outlay of Rs. 6,000 and a recurring annual expenditure of Rs. 3,000 for a period of four years, (*b*) to open classes for imparting instruction in Horticulture—theoretical and practical—in the Lal-Bagh, and (*c*) to strengthen the staff of the Superintendent, Government Gardens, by the appointment of at least four Horticultural Inspectors."

Resolution III.—As the recommendations of the Board on the subject have already been submitted to Government, no further action need be taken in the matter for the present.

(2) "This Conference is of opinion that it is essential for the stability of Mysore Sericulture that the Indian market should be developed for Mysore silk, and an investigation is urgently required to ascertain the nature and extent of the Indian demand and the trade conditions prevailing in the silk market."

Resolution IV.—Resolved that the subject be referred to the Sericultural Sub-Committee.

(3) "This Conference is of opinion that it is necessary in the interests of the silk industry that a system of local Silk Associations affiliated to a Central Association should be organized."

Resolution V.—It was decided that this might be discussed by the Board along with the recommendations of the Sericultural Sub-Committee.

(4) "This Conference recommends that a provision of Rs. 10,000 be made in the budget of the Sericultural Department for the purchase and sale of domestic basins to sericulturists."

Resolution VI.—As provision has already been made in the current year's budget for the purchase and sale of domestic basins, no further action is necessary.

(5) "This Conference recommends that the rule prohibiting the cultivation of coffee 25 yards on either side of jungle streams be abolished."

Resolution VII.—The matter should be referred to the Sub-Committee for the development of coffee, cardamom, tea and arecanut cultivation.

(6) "This Conference recommends that as the depressed classes to whom lands have been granted by Government find it impossible to cultivate these lands on account of want of capital, Government be requested to sanction a takkavi loan of not less than Rs. 50,000 for financing these classes through

Co-operative Societies established for the purpose, and the Agricultural Department be requested to give all help and assistance to the scheme."

Resolution VIII.—The matter should be referred to the Rural Development Sub-Committee.

III. *Resolutions of the Sericultural Sub-Committee.*—(1) "This Sub-Committee concur entirely with Resolution I of the Channapatna Conference regarding the necessity of sufficient seed supply for the Development of Sericulture and propose that Government be moved to sanction (*a*) the appointment of four Sericultural Inspectors each on a salary of Rs. 40 per month, and six operatives each on a salary of Rs. 25 a month for a period of one year, and (2) a grant of Rs. 10,000 in the budget of the Superintendent of Sericulture for 1925-26 for financing aided grainages by loans."

Mr. Rama Rao said that Government had already sanctioned the loan; and the additional staff asked for was quite essential

Resolution IX.—Resolved that Resolution I of the Sericultural Sub-Committee be approved, and sanction of Government be solicited for the appointment of the additional staff proposed therein.

(2) "This Sub-Committee agree with Resolution II of the Sericultural Conference regarding the importance of high class cross-breed layings on a large scale, to facilitate the supply of these to sericulturists at all times, they recommend that a cold storage plant be erected at Channapatna, and Government be requested to provide Rs. 4,500 for this purpose in the next year's budget."

The Chairman observed that the subject was already before Government who had called for some information regarding the upkeep of the plant, on receipt of which, final orders would be passed.

Mr. Rama Rao gave some interesting details about the different silk markets of the world, and the position of Mysore as the foremost silk-producing State in India, and observed that the erection of a cold storage plant was very essential.

Resolution X.—Resolved that the Board do support Resolution II of the Sericultural Sub-Committee *re.* the erection of a cold storage plant at Channapatna at a cost of about Rs. 4,500.

(3) "This Sub-Committee recommend that adequate provision be made in the budget of the Sericultural Department for granting loans to such of the sericulturists as deserve help for the purchase of domestic basins. They also consider that wherever possible, sericulturists should take full advantage of Co-operative Societies in their respective localities for obtaining loans for the purchase of domestic basins."

Mr. Rama Rao observed that a sum of Rs. 12,000 had been provided in the current year's budget for the grant of loans to sericulturists under the takkavi loans scheme, and Rs. 7,500 had been sanctioned for the manufacture of domestic basins, and arrangements had been made for their sale by Co-operative Societies, and said that further grants were necessary to push through this important work of popularizing the use of these basins. The rest of the members also agreed to the adoption of the following resolution :—

Resolution XI.—While thanking the Government for the liberal grants already provided in the current year's budget for the purpose of popularizing the use of domestic basins among the sericulturists of the State, this Board are of opinion that Government should be approached for a further loan of Rs. 10,000 for the same purpose, the Director of Agriculture being requested to submit detailed proposals as to how this amount will be utilized.

(4) "This Sub-Committee consider the formation of Taluk and District Silk Associations in the sericultural areas of the State with a Central Silk Association as an apex as absolutely essential for the development of the sericultural industry in the State, and they are of opinion that a preliminary preparation of the ground by propagandistic work by the Superintendent of Sericulture in the sericultural taluks should precede the actual formation of the associations.

Resolved further that the Superintendent of Sericulture be requested to draft the rules and bye-laws necessary for the formation of these associations and bring them up for the consideration of this Sub-Committee at its next meeting. It is, however, understood that the Superintendent of Sericulture will associate himself with the leading silk merchants and sericulturists in the different localities in the propagandistic work connected with the starting of the associations, the question of organizing annual conferences being left to the Central Association after it is formed."

The Chairman desired to know what the functions of the association would be, and if it was likely to seek for any grant-in-aid from Government.

Mr. Rama Rao said that the most important functions of the association would be (i) to study the exact requirements of the different markets, (ii) to encourage the production of the particular qualities of silk which were in great demand, and (iii) to establish a conditioning house for testing the silks and guaranteeing their quality. All this work was quite essential if we should capture the prominent silk markets of the world. He added that all the financial help he would ask at present from Government in this connection was a slight enhancement of the grants under travelling allowance in his budget.

After some further discussion about the probable amount that might be needed during the current year and other details, the following resolution was passed :—

Resolution XII.—This Board concurs entirely with Resolution IV of the Sericultural Sub-Committee regarding the formation of a Central Silk Association and District and Taluk Silk Associations affiliated to it and request Government to make a provision of Rs. 2,000 to meet the extra travelling expenses of the Superintendent of Sericulture and others for touring in the districts for the necessary propagandistic work.

(5) "This Sub-Committee agree with Resolution V of the Channapatna Conference that Sericultural Co-operative Societies with only sericulturists as members should be started on a large scale in sericultural areas and that Government should be requested to render all possible help to staff and work these societies."

Resolution XIII.—Resolved that Resolution V of the Sericultural Sub-Committee be approved and that the Director of Agriculture be requested to submit definite and detailed proposals.

(6) "That in view of the importance of the silk industry to the State touching as it does the lives of over two lakhs of people, the Government be moved to give the sericultural industry special representation in the Legislative Council as in the case of the coffee industry since the income from the silk industry amounts to over a crore of rupees annually while that from coffee amounts to rupees 30 lakhs."

The Chairman desired to know how it was proposed to bring about this representation in the present more or less disorganized condition of the sericultural industry, and if it would not be more advisable to wait till after the formation of the proposed Silk Associations for approaching Government with this request.

Mr. Rama Rao said that although the Central Silk Association when formed would be the most appropriate body to send an elected representative to the Legislative Council, Government could in the meanwhile be requested to nominate a suitable person to represent sericultural interests.

The Chairman observed that even at present, the Superintendent of Sericulture could submit to Government drafts of such legislative measures as he considered necessary to safeguard the interests of the sericulturists of the State, and that there is provision to co-opt an expert for considering particular bills.

The following resolution was adopted :—

Resolution XIV.—Resolved that the question of electing a member to represent sericultural interests in the Legislative Council be considered after the formation of the Central Silk Association, and that if in the meantime any legislative measures are considered to be necessary, the Superintendent of Sericulture might submit his proposals to Government through the Director of Agriculture for such action as they might deem fit.

(7) "This Sub-Committee are of opinion that the equipment of the Department of Sericulture in buildings, staff and funds is quite insufficient and they therefore resolve that Government should be approached for providing more facilities to the Sericultural Department by making enhanced grants in the next year's budget."

"Resolved that Government be approached to make suitable provision in the budget of the Superintendent of Sericulture for 1925-26, for granting liberal loans to sericulturists, and that the Superintendent of Sericulture be requested to see that as far as possible the loans were not given in cash, but the necessary materials, such as seed, etc., were supplied, and that when cash had to be given, it was given in instalments after satisfying himself that it was always spent for the purpose for which it had been sanctioned."

Resolution XV.—Recorded.

IV. *Resolutions of the Sub-Committee for Considering the Government Order relating to the Export and the Import Trade of Mysore.*—Mr. Rama Iyengar suggested that a consideration of these resolutions be postponed till after the publication of the Report of the Indian Economic Enquiry Committee, but the other members were in favour of discussing the subject.

(1) "This Sub-Committee is of opinion that the figures relating to the export and the import trade contained in Government Order No. I. C. 3900-14—Stcs. 25-24-1, dated 9th December 1924, are incomplete inasmuch as they do not include statistics relating to road-borne traffic and consequently conclusions based on them are erroneous and misleading."

(2) "This Sub-Committee does not consider it necessary to establish frontier registering stations for the collection of statistics relating to road-borne traffic until the financial condition of the State improves, and any money that could be spared should be utilized for work connected with the general development of the agricultural resources of the State."

After a few general observations on the part of various members about the omission of export of cattle and gold, and the imports of cash in the figures quoted in the Government Order, the following resolution was unanimously adopted :—

Resolution XVI.—As there is no evidence either of large investments by the public of Mysore outside the State to necessitate the increase of imports over exports, or evidence of export of treasure from the State for paying for excess of imports excepting bullion from the Gold Fields, it would appear that the figures furnished in the Government Order cannot be correct ; this is also borne out by the facts that there are no figures available for road-borne traffic, or for the export of bullion from the State and that if bullion is added, exports and imports will nearly tally. This Board is of opinion that the progress of the country is to be judged more by increase in the total volume of the trade and the nature of commodities that constitute it than by the excess of either import or export over the other and hence that it is not very essential to spend money at present for collecting statistics of road-borne traffic. The Board would recommend that all available money might be utilized for work connected with the general development of the agricultural resources of the State.

(3) "This Sub-Committee is of opinion that although it is not desirable to revive the ancient system of storing up grain in Dharmagolas to any large extent, an attempt might be made to start Co-operative Grain Banks in suitable places."

(4) "This Sub-Committee desires to emphasize the need of encouraging the cultivation of fodder crops and their preservation and storage in silos."

(5) "This Sub-Committee is of opinion that Horticulture, Sericulture and Cattle-breeding are the best subsidiary occupations that could be taken up by our ryots and not spinning and weaving, and it does not therefore recommend spending any money in attempting to introduce spinning and weaving as subsidiary occupations among our ryots."

Resolution XVII.—Resolved that all these three resolutions be referred to the Rural Development Sub-Committee for consideration and for submitting definite proposals to the Board.

V. The Government Order regarding the sale of agricultural implements, etc., to Co-operative Societies at concession rates was read, and recorded.

VI. Letter from the Economic Survey Officer regarding consolidation of scattered holdings was read, and recorded.

Extracts from the Economic Survey Officer's Report to Government were ordered to be obtained from the Government and sent to the members of the Rural Development Sub-Committee for consideration and submission of definite proposals to the Board.

VII. Government Order regarding the proposal of the Board to depute the Superintendent of Sericulture and a prominent silk merchant to important centres of silk trade in North India was read, and recorded.

VIII. Government Order regarding grant of lands for mulberry cultivation was read for the information of the members of the Board, and recorded.

IX. Government Order sanctioning certain concessions for the development of fruit cultivation in the Yemmedoddi Kaval was read for the information of the members of the Board, and recorded.

APPENDIX.

PROGRAMME FOR 1925—26.

No.	Subject	Persons Responsible
	I. RURAL DEVELOPMENT	
1	Development of Agriculture in the Malnad.	The Revenue Commissioner (Convener).
2	Utilization of the co-operative movement in furthering agricultural improvement.	The Offg. Director of Agriculture. The Chief Engineer.
3	Grant of takkavi loans to members of the depressed classes through Co-operative Societies for cultivating lands.	The Registrar of Co-operative Societies. Mr. B. Venkoba Rao. ,, P. Hunt.
4	Increased production of food crops.	,, T. Narasinga Rao.
5	Land Mortgage Banks.	,, A. T. Mc Isaac.
6	Consolidation of scattered holdings.	,, C. Narasimhayya.
7	Formation of colonies of agriculturists.	,, N. Rama Rao.
8	Improving the roads in rural areas to facilitate the movement of agricultural produce.	Dr. K. Kunhi Kannan (Co-opted). Mr. A. K. Yegnanarayana Iyer (Co-opted).
9	Detailed consideration of Dr. Coleman's Note of 1917.	,, M. S. Linge Gowda.
10	Co-ordinating Village Panchayets and District Boards in the Agricultural Development—what is now done and what improvements are possible.	,, S. Hampiah.
11	Development of subsidiary occupations.	
	II. AGRICULTURAL EDUCATION.	
1	Popularization of agricultural knowledge.	The Offg. Director of Agriculture (Convener
2	Co-operative Education.	The Inspector-General of Education.
3	Sericultural do.	Mr. H. Boranna.
4	Agricultural Education of the elementary and secondary grades.	,, B. Venkoba Rao. The Offg. Supt., Government Gardens
5	Investigation of types and methods.	Mr. N. Rama Rao.
6	Agricultural Faculty in the Univesity.	The Registrar of Co-operative Societies. The Agricultural Chemist. Mr. A. K. Yegnanarayana Iyer (Co-opted). ,, M. S. Linge Gowda.
	III. LIVE-STOCK.	
1	Improvement of draught and milch cattle.	The Offg. Director of Agriculture (Convener).
2	Do. sheep and goats.	The Officer in charge of the Live-Stock Section.
3	Pony breeding.	The Agricultural Chemist.
4	Scheme for the purchase of young Amrut Mahal bulls by Village Panchayets.	The Conservator of Forests. Major R. W. Simpson (Co-opted).
5	Improvement of fodder supplies and preservation in silos.	Mr. N. Krishna Iyengar. ,, M. S. Linge Gowda.
6	Epidemic diseases, prevention and cure.	Lt.-Col. W. L. Crawford.
	IV. DEVELOPMENT OF COFFEE, CARDAMOM, TEA AND ARECANUT CULTIVATION.	
1	Abrogation of the 50 yards rule.	The Offg. Director of Agriculture (Convener).
2	Establishment of a Coffee Bank.	Dr. M. K. Venkata Rao (Co-opted).
3	Manuring of coffee and cardamom.	The Conservator of Forets.
4	Establishing a Coffee Curing House.	Mr. T. Narasinga Rao.
5	Establishment of a Coffee Experimental Station.	,, Subramania Bhatta. ,, P. Hunt. Lt.-Col. W. L. Crawford.
	V. DEVELOPMENT OF SUGARCANE, COTTON, GROUNDNUT AND COCOANUT CULTIVATION.	
1	Supply of artificial manures.	The Offg. Director of Agriculture (Convener).
2	Growers' Associations.	The Chief Engineer.
3	New varieties and methods of cultivation.	The Agricultural Chemist.
4	Markets.	The Offg. Supt., Government Gardens. Mr. N. Krishna Iyengar. ,, Hutchveera Gowda. ,, M. S. Linge Gowda. ,, Ananthiah Setty.

No.	Subject	Persons Responsible
	VI. SERICULTURE.	
1	Formation of Silk Associations.	The Offg. Director of Agriculture (Convener).
2	Providing funds for the purchase and sale of domestic basins to Sericulturists.	The Superintendent of Sericulture. The Registrar of Co-operative Societies.
3	Establishing a Conditioning House for standardizing silk production.	Mr. S. Hampiah. „ T. Narsinga Rao.
4	Development of markets for Mysore Silk.	„ B. Venkoba Rao.
5	Supply of disease-free seed.	„ F. M. Abdul Quddus (Co-opted).
6	Sericultural Co-operation.	
7	Do. Farm at Sidlaghatta.	
8	Formation of Mulberry Topes.	
	VII. HORTICULTURE.	
1	Extension of fruit cultivation and fruit canning.	The Offg. Director of Agriculture (Convener).
2	School gardens.	Dr. M. K. Venkata Rao (Co-opted).
3	Horticultural Education.	The Agricultural Chemist.
4	Starting of a Central Fruit Nursery and Orchard.	Mr. A. T. Mc Isaac. „ M. S. Linge Gowda. „ C. Narsimhayya.

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Condition of Rubber Industry in United States.

By Francis H. Sisson,

Vice-President, Guaranty Trust Company of New York.

A consequence of the conditions which have prevailed in the American tire and rubber industry in the last few years is an increased interest in the international position of rubber. Such modern economic tendencies as large scale production, regional specialization and the mutual interdependence of nations and of economic groups are well exemplified in the growth and development of the rubber industry. In part as a result of these tendencies, and partly in consequence of certain features peculiar to the industry itself, a situation has arisen which has brought the question of the world's rubber supply into especial prominence.

The United States is by far the most important consumer of crude rubber, and takes normally about three-fourths of the world's supply. The great bulk of American rubber manufactures is consumed at home, only about 5 per cent of the total being exported. This country is almost entirely dependent on foreign supplies, since no rubber is produced in American territory except a very small amount in the Philippines. In recent years American interests have acquired plantations in the Far East comprising something like 3 per cent of the total acreage.

Rubber is one of the few commodities which exhibited a downward trend in price during the war and post-war inflation period. The growth of the automobile industry in previous years had created a demand for rubber in the United States which was far beyond the productive capacity of the existing plantations. As a result the price had risen to a point at which production was extremely profitable, reaching a peak of about $3 a pound early in 1910.

During the period of high prices planting proceeded very rapidly, but the disparity between demand and supply continued for some time, on account of the necessary lapse of from 4 to 6 years before the new trees came into bearing, and some 5 years more before they attained their maximum productivity.

In 1910 the decline in price began. By the end of 1913 quotations had gone as low as 60 cents a pound. At the outbreak of the war it was doubtful whether the free movement of rubber from the plantations could be continued, and the price rose irregularly until early in 1915, when it dropped again. For two years the movement was irregular, but in 1917 another decline began, which gained great momentum in 1920. During this time it became clear that the growth of demand, rapid as it was, was not sufficient to keep pace with the mounting supply. From the beginning of 1921 until near the end of 1922 the price was less than 20 cents a pound, which was admittedly far below the cost of production on most plantations.

In 1922 the British Government, after having failed to obtain the co-operation of the Dutch authorities, inaugurated a scheme for the restriction of exports of raw rubber from British territory. This measure, which is known as the Stevenson Plan, was based on a "standard production" computed on the basis of actual production by each estate in the year ended October 31, 1920, with an allowance for additional output from new areas. The percentage of the standard production to be exported in each quarter was to depend on the average price of rubber during the preceding quarter,

This plan is still in effect, and has apparently operated with a certain measure of success. There is no doubt that its immediate psychological effect was to accelerate the rise in price which was already under way at the time of its adoption. The advance continued for only a few months, however, and was followed by a nearly continuous decline which lasted until the middle of this year. Still, it appears probable that the Stevenson Plan has actually resulted in higher prices than would have obtained otherwise.

Nevertheless, serious difficulties have certainly been encountered. The Dutch and other producers have refused to co-operate, and have actually increased their output, reaping the benefits of higher prices without sharing the burden. A good deal of dissatisfaction with the plan has been apparent among the restricted producers, partly on the ground of actual losses incident to restriction, and partly on account of the inadvertent discrimination among different producers due to the rather arbitrary standard which was selected.

For some time after the adoption of the plan there was considerable alarm and antagonism among American consumers, based on the fear of shortage and high prices. For a time it appeared that a buying organization might be formed to protect the interests of domestic manufacturers. No shortage has developed, however, nor has there been evidence of any attempt to raise prices to unreasonable levels.

The restriction plan was unfortunately timed with reference to conditions in the United States. American rubber manufacturers suffered severely from the effects of the depression of 1921. The quick growth of demand in preceding years, coupled with low costs and good profits, had induced rapid expansion in production and in plant capacities. At the time of the price decline in 1920 stocks of tires and of crude rubber were very large, and the sudden deflation caused heavy inventory losses. A quick reduction of stocks was impossible on account of the restricted demand. The large inventories of 1920 were reduced in the first half of 1921, but then rose rapidly for nearly a year. Under these conditions it is not surprising that manufacturers were alarmed at the prospect of curtailed supplies of rubber and rising costs induced by artificial regulation.

The last few years have been characterized by large and increasing demand and generally active operations, but the financial effects of the collapse of 1920 and 1921 have disappeared slowly. The desire to utilize the large plant capacities to the greatest possible extent has been a factor tending toward over-production and price depression. One of the most important achievements of the American manufacturers during this period is the remarkable increase which has been effected in operating efficiency and economy.

At the beginning of 1923 production increased rapidly and stock mounted, but a sharp curtailment of output in the latter half of the year, together with an active demand, reduced stocks. Another increase in activity occurred early this year, but was much less pronounced than that of 1923; and the subsequent decline in the late spring and early summer reduced inventories nearly to the level of last December. Although production turned sharply upward in August, it was materially less than shipments during the same period. Leading producers are now understood to be operating at or near capacity.

The failure of prices to respond to quickened demand in the United States in the last year or more is attributable in part to the growing popularity here of the balloon tire and the unwillingness of manufacturers to run the risk of being caught with large inventories of the high-pressure types. Prices of tires this year have been based on a quotation of about 20 cents a pound for raw rubber. Since June, the price of rubber has risen from 18½ to 34 cents, and it is probable that little or no 20-cent rubber remains on hand.

The longer-term prospect is distinctly more encouraging. With a normal growth of demand the pressure of competition will be reduced, and the present uncertainty as to the relative popularity of the balloon and high-pressure types will be removed. The fact that the demand for tires, like the demand for automobiles, is becoming more and more a matter of replacement requirements should be a factor making for stability.

In the long run, one of the most vital questions relating to the future of the American rubber industry is that of the abundance and cost of the raw material. The dependence of this country on supplies from abroad was brought forcibly to the attention of domestic consumers by the policy of restriction, and a good deal of thought was given to the possibility of developing the production of raw rubber, either in American territory or by American companies abroad. Official investigations revealed that the production of the Philippine Islands could not be greatly

increased under present conditions because of the lack of an adequate supply of cheap labor, and that no rubber-producing plant capable of cultivation in temperate climates could compete with the highly productive plantations of the Far East. The acquisition of plantation areas in the Orient by American companies has made some progress, but it remains to be seen whether this will become an important factor in the international situation. Even if such acquisition should take place on a considerable scale, the production would still be subject to regulation by the governments of the territories concerned.

The necessity for an independent American supply of raw rubber, however, no longer appears so great as it did a year ago. In the first place, the very fact of restriction has called attention to the potential over-supply represented by areas already planted. In the second place, it has come to be widely believed that restriction cannot go on indefinitely. In the third place, there is every prospect that the normal growth of demand will remove the alternative between drastic regulation and financial disaster resulting from over-production. And in the fourth place, it is clear that producers in general have made no attempt to take unfair advantage of their position. Measures of control have been designed merely to adjust production to demand in such a way as to stabilize prices at a reasonable level.

"Then and Now"—Review.*

By A. S. Venkataraman, B.A.

"That history repeats itself is perhaps rather a popular than a scientific belief, but it provides its students with remarkable parallels and resemblances is surely unquestionable." This is the *raison d'etre* of the publication on post-war problems of a hundred years ago. The difficulties left behind the Napoleonic wars and the Great War are so essentially similar that he who attempts a solution of the latter cannot but peep into the past to seek a remedy for the present ills. By her lucid, well-informed and compendious treatment of the post-war period of a hundred years ago, Mrs. Fisher brings home the fundamentals of agreement between the difficulties as a sequel to the great conflicts. Her book supplies a real want.

The post-war dealings with agriculture have their counterpart in the constructive policy for agriculture in the Post-Napoleonic period. We find the same atmosphere of uncertainty, the same sense of fumbling, similar shifty expedients, while in the present Post-War period, attempts at reconstruction, *e.g.*, Enfranchisement, Education, Maternity and Child-Welfare, Housing, etc., are distinctly noteworthy. In either case, we find pretty similar efforts to pay back debts, to tackle unemployment and to create trade facilities owing to dislocation especially when world dislocation and internal dislocation become pronounced evils, similar attempts at relief, retrenchment, schemes to reduce taxation coupled with schemes at financial development, heavy burdens of taxation, efforts to restore credit, new needs, new unwillingness to work, similar agricultural and industrial problems.

In her chapter on "England in the Early 19th Century", the author contrasts the old, peaceful hungry England sometimes ravaged by disease with her self-contained villages, little market towns and unusable roads, with the England of the Post-Industrial Revolution accompanied by the revolutions in Agriculture and Transport. Manual labour was being replaced by machinery, small-scale production by large-scale production, ordinary conveyances by steam locomotives, steamships, old small farmer giving place to the new landed gentry. The change was so rapid that the labourers could not adapt themselves at all to the changing conditions. The low wages of farmers are to be pitted against the heavy commitments of landowners unable in a period of falling price and after-war diminution of purchasing power of money to meet the interest charges, etc.

The chapter on "Rural Problem" supplies an excellent pen-picture of the suffering, distress, the evil effects of the Corn Law, the foreign corn hanging over the home-producer like the sword of Damocles. With a deft hand, she touches the erection of factories in other countries, as an indirect result of the war destroying the English woollen goods market,

* "Then and Now." by Mrs. H. A. L. Fisher Humphrey Milford. With an introduction by the Rt. Hon. David Lloyd George, O.M. Oxford University Press, Bombay. Price 5*sh*.

and the essential points of comparison between the difficulties in the Post-Napoleonic and the Post-Great War periods are very aptly and effectively dealt with—the same necessity to grow food at home, a great expansion of corn-growing, a shrinkage of the margin of cultivation, a steady fall of prices due to currency changes and to the diminution of effective demand, increased cost of production and the need to maintain the unemployed, heavy-commitments in the high-price period.

If the atmosphere of agriculture was one of gloom, that of industry was mainly dark. The rapid development of industries in the Napoleonic wars brought about accumulation, lack of demand, depression, unemployment and distress in the post-war period. The commercial trouble, according to the author, was due to the financial system or lack of it, the Navigation Laws and their exceptions and the heavy complicated tariff. Foreign commerce was excluded, and industries prostrated. Longer periods of distress were sandwiched by shorter spells of prosperity. Simplification of the tariff, retrenchment and economy were all demanded. The Industrial conditions were so bad that they necessitate legislative interference like the Factory Acts, Trades Union Acts, Public Health Act, etc.

The efforts at managing Post-War Finance are described in a manner as to invite the deliberate attention of modern post-war financiers. The post-war problems concern themselves with plans to reduce expenditure and to pay off debts and to adjust the relations between loans and taxes. Pitt laid the foundations of an improved financial system by efforts to reduce expenditure, to simplify the tariff, to reduce debt by methods like redemption of debt and the Sinking Fund. The plans were upset in the war period. By 1824 the Chancellor's aims as declared were three-fold : (*a*) increased consumption, (*b*) the diminution of smuggling, (*c*) the relief of direct taxation and the lessons derived from experience in the Post-Napoleonic period are :-

1. A tax which takes much more from the tax-payers than it gives to the Exchequer is not a good tax.

2. Remissions, if wisely planned, might mean not a loss but a gain to the Exchequer.

The parallel between the two sets of circumstances is made more apposite by efforts at tackling post-war currency problem. Then, as now, during the war, cash payments were suspended. The 'paper system' which continued for 24 years was denounced by Ricardo, Huskisson, Peel and Cobbett. After the war, then as now, while some classes of the community lost by high prices, others gained. Complaints of price fluctuations were made. Then, as now, the producers believed in high price-levels, forgetting that, high prices, while they may give a stimulus to production, tend to check consumption, forgetting too, that periods of rising prices seem to lead to speculation, over-production and depression. Then, as now, consumers, annuitants, pensioners, people with fixed incomes suffered. But we are saved from some of the difficulties against which the people then had to contend like speculation. Perhaps they were not faced as we are by the complex currency problems because of the welter of shattered currencies in Europe now and the attempts of the pound-sterling to reach the dollar level. Great are the differences and great too, were the resemblances. The arguments of the inflationists and the deflationists, then as now, were the same more or less, the difficulties familiar, stabilization then, as now, was needed. Then, as now, the advocates of the metallic standard were justified.

The author should be congratulated on her excellent, handy publication and we only wish she writes a separate treatise on Post-War Finance in greater detail, as her skill in handling post-war problems is marvellous. The Oxford Press deserves to be complimented on the timely publication of a much needed book and the get-up, which leaves nothing to be desired.

An addition to the list of artificial textile products is now being placed on the British Market, writes the London correspondent o the *Manchester Guardian Commercial*. It is described as an artificial linen, and its manufacturers claim that it possesses all the qualities and virtue of the genuine flax fibre, while its cost is appreciably less.

That this new textile will emulate the example of artificial silk, so far as popularity and extent of production are concerned, is improbable, but its progress will be watched with great interest, particularly by those engaged in the important linen industries of Northern Ireland and Scotland. It may also, on a price basis, compete rather seriously with certain makes of cotton goods.

Specimens of the artificial linen show a variety of weaves, ranging from coarse to very fine. The material is manufactured in France, it is understood,

Agriculture in Madras, 1924-25.

By "Son of the Soil".

Mr. Anstead's Report on the progress of Agriculture in Madras during 1924-25 is a full and interesting one. Though the unfavourable seasonal conditions of the year interfered to some extent with the normal activities of the department in the greater part of the Presidency, yet in spite of disastrous floods on the East and West coasts at one period and deficiency of rainfall at another, steady progress was made in most branches of work. As regards agricultural education, we note there was a great fall in the number of applications for admission to the three-year degree course at the college. The two-year certificate course has now come to an end, but the Univesity have not as yet arrived at any conclusion as to the syllabus of the proposed Intermediate course which is to take its place. The two Agricultural Middle Schools established in 1922 at Taliparamba in Malabar and Anakapalle in Vizagapatam failed to fulfil expectations ; the number of entries shows a tendency to decrease and the proportion of students who have completed the full two years' course and returned to the cultivation of their own lands is small. The fundamental difficulty appears to be that the average ryot can see the advantage of agricultural education for his son if it leads to an appointment in Government service, but as yet fails to appreciate the value of a sound practical training in modern methods of cultivation if his son is to do no more than apply the knowledge he has gained to the improvement of the family holding. The experience of other parts of India is the same ; agricultural education *qua* education everywhere fails to appeal. The Government, however, do not consider that comparative failure over so short a period of time is a sufficient reason to discontinue the experiment. A system of agricultural education imparted through the medium of the vernacular for the benefit of genuine cultivators is sound in itself and though at present the idea may be in advance of public opinion, public opinion cannot be educated unless facilities for this type of education are provided. The Government, therefore, propose to continue the two existing schools and to open two more schools, one at Kalahasti in Chittoor and the other at a centre to be selected in the Tamil linguistic area.

Research work on the two principal crops, paddy and cotton, progressed on normal lines in spite of the unfavourable character of the season at many of the centres. Financial stringency prevented the expansion of the research staff and limited the investigation of new problems. In the Plant-breeding section, systematic work has only recently begun on cholam, ragi and other varieties of millets, no definite results have yet been obtained for groundnuts and other oilseeds, and nothing has been done for pulses of which red gram and Bengal gram are the most important. The need for additional staff to conduct investigations and additional stations to carry out experiments seems urgent. In the Chemistry, Entomology and Mycology sections important problems connected with soils and manures remain to be solved, and plant diseases, fungoid, bacterial and physiological, have yet to be investigated. The reorganization and strengthening of these sections is, we note, under the consideration of the Government. In the Live-Stock section the acquisition by the department of the Hosur Remount Depot which comprises some 1,600 acres of excellent pasture and buildings sufficient to house nearly a thousand head of stock will enable investigations into problems of cattle-breeding and dairying to be conducted on a scale proportionate to their importance. Hosur, working in close conjunction with Coimbatore, will deal with the local Kangayam breed of cattle, with the improvement of milch cows by crossing strains imported from abroad and other parts of India, and with sheep breeding, pig breeding and poultry rearing, while the Chintaladevi and Guntur farms will concentrate on the breeding of Ongole cattle and buffaloes, respectively. We note the valuable help given to the Department by co-operative societies on the West Coast in combating the spread of plant disease. Palm disease, which in the last decade has caused the loss of many lakhs of palmyras in the Godavari delta, continued to take a heavy toll of trees in spite of the efforts of the special staff which has recently been strengthened. It is to be hoped that the amendment of the Agricultural Pests and Diseases Act passed in the March session of the Legislative Council will prove effective in checking the alarming increase of the insect pests to which Cambodia cotton is peculiarly liable. Experience in all the principal cotton-growing countries has shown that the only practicable remedy is to uproot the plants on

a fixed date and keep the land completely clear for a minimum period of two months. If September, the date provisionally fixed for the uprooting of cotton, is found to be too late to allow of a sufficiently long "dead season" an earlier date will have to be notified.

The demonstration work of the Department consisted mainly in popularizing improved varieties of seed and in introducing economic methods of planting and better systems of manuring the land. The propagation of improved varieties of sugarcane on an adequate scale must await the opening of a cane-breeding station in the Vizagapatam district which, according to the present programme, will take place in 1926—27, but considerable success was obtained in introducing better appliances for the extraction of juice and the preparation of jaggery. As regards paddy, the principal crop of the Presidency, the system of economic planting, which both decreases the quantity of seed required and increases the yield per acre, and the system of fertilization of the land by the cultivation of green manure crops are so well established that the area to which these new methods are applied increases to a large extent automatically; figures from the different circles, however, indicate definite progress in almost all parts of the Presidency through the direct intervention of officers of the department. Work for the improvement of cotton, the second most important crop on the East Coast, proceeded on the usual lines and consisted mainly in the production and distribution of good seed and in the demonstration of the advantages of drill cultivation. The efforts of the Department to improve the quality of cotton in the three main cotton-growing areas of the Presidency have so far been hampered and to some extent neutralized by the importation of inferior sorts for purposes of adulteration in ginneries and presses. The Cotton Transport Act, which has recently been made applicable to the Madras Presidency, by restricting the movement of cotton in three protected areas, will, we hope, lessen opportunities for the intentional or accidental admixture of seed and assist the cultivator of Cambodia and other superior varieties of cotton to realize a better price for his produce.

The Report bears testimony to a distinct advance in the sales of improved agricultural implements and to an increase in the demand for spare parts which shows that the ploughs and other implements supplied in previous years have been found to be helpful in the field. It is to be regretted that no research work has yet been attempted in this branch for want of staff and an adequate workshop. A special feature of the year was the increasingly close liaison between the Agricultural and Co-operative Departments. Apart from the purchase of seeds, manures and agricultural implements there are wide possibilities for the expansion of co-operative activities in joint production and joint marketing of produce. District Federations of Unions which are in course of organization in most districts will, it is hoped, take a real interest and play a definite part in agricultural propaganda work: through the medium of special sub-committees they are capable of performing most of the functions of District Agricultural Associations with better prospects of success than the present organizations whose failure is attributable to the fact that most of them are artificial creations containing comparatively few genuine agriculturists and have depended too much on official inspiration and support. We note the propaganda done through magic lantern slides at fairs and festivals. It should be persisted in for many years to come. The map at the end showing the changes, statistics and the distribution of main crops is, we may note, an excellent one. The programme of work outlined in the concluding section of the Director's report calls for no special comment, though it gives an idea of what the Department has to do in the immediate future. Consequent on the partial remission of the Provincial contribution it has been found possible to supplement the budget provision for agriculture amounting to approximately sixteen lakhs in the current year by the grant of another lakh and a half, which has been allotted mainly to the acquisition of land for additional agricultural stations in the Godavari delta and in Malabar, to the expansion of the Live-Stock section and to the strengthening of the district demonstration staff. The Madras Government, we are told, have, under consideration, further proposals for agricultural research and development, which, if financial conditions permit, ought to enable the Department to expand its activities on a scale commensurate with their importance.

The Crewe Committee at Geneva has accepted a Ceylon Doctor's offer to go to London in October and conduct a bovine test. This is regarded as a crucial test, and may prove to be the turning point of his fortunes. He assured the High Commissioner for New Zealand that he could not supply the full serum for a year. The Crewe Committee, therefore, has agreed to a partial experiment being made immediately.

Rural Education in Bombay.

By "Academicus".

The problem of rural education is a constantly recurring problem in the history of all countries maintaining a state system of education, and particularly in countries whose wealth is mainly derived from the soil. Every decade or so there is a press outcry against the influx into the towns of the rural population, and the menace of industrialism; and the Government of the day is blamed for failing to provide the right type of education for the children of the villages. In the Bombay Presidency the main criticism has always been that the education provided is too literary, and that it ought to be given a practical or vocational bias.

It was in order to meet this criticism that the Government of Bombay some thirteen years ago sanctioned a revised set of standards for rural schools. The experiment was tried for three years and failed, and the standards were abolished in 1916. The cause of failure was not so much the unsuitability of the revised syllabus as the inability of the teachers to carry it out in the spirit of the instructions given, and also the very reasonable objection put forward by the rural population that the new standards would place their children in a position inferior to that of town children who followed the ordinary vernacular course, and debar them from access to commercial or clerical appointments.

In order to meet this objection and at the same time to provide an education more suited to rural needs, the Government of Bombay decided in 1921 to start an alternative agricultural course in the last three standards (V to VII) of 20 selected schools situated in a good agricultural tract. The course being an alternative one there could be no question of compulsion, and the actual syllabus is a more suitable one than the old 'rural standards'.

The chief features of this syllabus, which has been worked out after long and careful consultation between the Educational and Agricultural Departments, are (1) the closer correlation of Arithmetic, Nature Study, Geography, and Drawing with rural life, (2) the definite study of the elements of agriculture both in theory and practice, (3) practical work in the fields, together with carpentry and smithy work. The aim of this course is not purely vocational, but rather 'pre-vocational'—education for agriculture rather than education in agriculture. The special work done by the boys who choose this course does not occupy their whole day; they continue to work with the other boys in general subjects of education.

The special teachers necessary for this work have been very carefully selected and trained for a year at a Government Agricultural School. They belong to the cultivator class, and in some cases have property of their own. With one or two exceptions all are second year trained teachers. After the year's training in an Agricultural School they rank as third year teachers. There are 23 such teachers working at different places.

Although this is an experimental measure and its success cannot be definitely determined until it has been in force for 3 or 4 years, it is intended to proceed with the scheme for the present. Later on it will be the business of the Local Authorities.

In order to remove any lingering suspicion there may be on the part of the villagers it has been decided to institute an Agricultural Vernacular Final Examination with a certificate equal in all respects to the ordinary Vernacular Final Certificate, *i.e.*, men with this certificate if they serve as teachers will be considered as qualified, and will be eligible for admission to a Training College. It is proposed to devise a special course of training for such men, calculated to make them more suitable for service in rural schools generally.

The first Agricultural Vernacular Final Examination will be held in 1926 in the Presidency proper, and in 1927 in Sind and by that time a suitable rural training course will be ready. It is at present intended that one of the existing Training institutions should be converted into a Rural Training College.

Before the Public Accounts Committee at Simla, an official witness stated that, in one year, $2\frac{3}{4}$ million railway passengers travelled without tickets. The Railway Board had sent a recommendation to the Central Advisory Council, for the strengthening of the law, but the latter had not accepted it. The Board feared that, if they took strong action, it would lead to innumerable questions in the Legislative Assembly: as things were at present, most of the people found to have travelled without tickets merely gave a false address and went away.

Some Biological Methods of Insect Pest Control.

By Christopher Hay, M.A.

In the July *Digest* of the Department of Agriculture, Madras, there is an interesting note on the subject of insect pest control, which I should like to deal out this month to my readers. It is quite evident, says the writer, that from those very early days when half civilized man gave up his wild and predatory habits for a settled life and began to grow crops and tend cattle, the struggle between man and nature must have commenced to increase appreciably —man consciously or unconsciously upsetting the normal conditions prevailing in the universe, and nature asserting herself every time to re-establish her supremacy. Gradually, through ages of civilization as this protracted struggle continued, the most important change effected has been a more and more pronounced readjustment of the relations that originally existed between man and lower forms of life. Under the artificial conditions brought about by human agency, what is known as the "balance of life" in nature is constantly upset, especially among the lower forms of animals like insects ; and one of the various resulting phenomena happens to be an abnormal increase in the number of some lower forms of life which affect man—in other words, there is an outbreak of pests. It is generally believed that the most important factors which play their part in keeping up the normal balance in nature, especially among lower forms of life like insects, are food, climate, and enemies : and among the many human influences that help to upset the balance may be mentioned the destruction of forest areas, the growing of single crops in extensive areas, the frequent transport of plants and animals from place to place, and the indiscriminate destruction of several natural enemies. Man has, of course, recognized this self-inflicted but necessary and inevitable evil through past decades, and in all countries where scientific methods of agriculture have become well established, various methods of insect pest control have been devised from time to time, and in many cases with marked success. Prominent among these modern measures are the different agricultural and mechanical methods, and the use of insecticides in various ways—spraying, dusting, fumigation, etc. It has; however, been found by experience that such mechanical methods, however effective and practicable in some cases, are found in many instances to be quite impracticable, ineffective and quite uneconomical. Experienced entomologists in different countries, who have bestowed some thought and attention to this important aspect of economic entomology, have within recent years begun to feel that these time-honoured methods of fighting pests which are found to prove expensive failures in many cases must be supplemented or in some instances entirely replaced by some others which might be found more practicable and effective. With this idea a new line of treatment to control pests has been initiated. Very briefly explained, this comparatively novel method consists in the utilization of the natural enemies to control various kinds of pests. The different aspects connected with this line of treatment constitute what are generally known as the "biological methods of pest control". The object of this paper is to explain a few facts with regard to this method of pest control by insect agency, and to offer some suggestions with regard to what may be done in India in this interesting line of work.

The more outstanding features of the biological methods of insect pest control may be put down as (1) the recognition of the different natural enemies of the various insect pests of a country and a thorough study of the bionomics of those natural agents in all their relations with the host insects, or insects very closely allied to the host ; (2) affording all possible facilities for these natural enemies to multiply unhampered, and to carry on their beneficial work successfully ; (3) whenever and wherever possible and necessary, introduction of such insects from a different agricultural tract or country where they may be noted as efficient agents against some pest or pests of a similar nature. In fact; the whole idea is to try to restore as far as possible by artificial means conditions approaching the original natural balance of life. Though among natural enemies there are found fungi, bacteria and higher animals that may be utilized for this purpose, only the subject of insect agency is considered in this paper.

The Study of Beneficial Insects.

"The first step towards vanquishing an enemy," says Curtis, "is to ascertain correctly its habits, the next is to be certain of its appearance so as not to mistake one party for another,

and a third and no less important object is to be well acquainted with our friends and allies." Being very familiar only with the more obvious injuries done by insects, our farmers naturally conclude that there cannot exist any good insects. It will therefore be very useful if all cultivators begin to realize that among insects there are several forms which are eminently beneficial to man and learn to differentiate the good from the bad and not condemn all alike. The elder Pliny seems to have classified all insects into two divisions—*Coccids* or those preyed upon, and *Coccinellids* or those that are predatory. However curious this classification may be, it certainly shows that even in those early days the controlling influence of natural enemies was recognized as an important factor. Even Linnaeus, who has written so much on insects, does not appear to have made any mention of insect pests, evidently showing that even in his days the balance of life was fairly well kept, and as such no serious outbreaks of pests occurred as at present.

Among the various enemies of insects in nature, apart from higher animals like some insectivorous birds, mammals and reptiles, which levy an appreciable toll on the insect world, there exist among insects themselves several forms which, by their predatory and parasitic habits, act as natural enemies of various insects. These are what may be called insect-feeding or entomophagous insects. It is important to note, however, that among these entomophagous insects only such forms are of economic importance that depend for their food on particular species or groups of insects which are in any way harmful to man, and not others which feed indiscriminately on various forms. A knowledge, therefore, of such insects and their life habits is essential before any biological methods of insect control are attempted. Prominent among these friendly insects are the great bulk of the group of beetles called 'lady birds' (*Coccinellidæ*), many 'hover flies' (*Syrphidæ*), the numerous lace wing flies (*Chrysopidæ*), the 'bristle flies' (*Tachinidæ*) and the hordes of parasitic hymenoptera. All these natural enemies are either predatory or parasitic in habits. Those of the former kind hunt their insect prey and feed on them like wild beasts, while the parasites, instead of killing their hosts immediately, make use of them as food for their offspring by depositing eggs on or into their bodies ; these eggs hatch and the larvæ grow at the expense of the body contents of the host which is gradually killed.

The lady bird beetles include the most important of the predatory insects of economic importance. These are well known to wipe away from infested plants whole colonies of plant lice, scale insects, mealy bugs, white flies, etc., which are often found to be serious pests in most countries ; and in countries like California, Australia and South Africa, etc., different species of these beetles are being regularly made use of to fight scale and mealy bug pests of fruit trees. There are a good many species of these beetles in India but very little is really known of them, especially regarding their food habits. For example, the writer has recently found a new species of these beetles (*Scymnus coccivora*) which has been noted to be an extremely effective natural enemy of the destructive nim scale (*Pulvinaria maxima*) in and around Coimbatore, the beetle and its grub voraciously feeding on the eggs of the scale pest. A study, therefore, of the Coccinellid fauna of a tract with special reference to their food relations will be of very great use, and in South India, especially if made with particular reference to the green and brown bugs of coffee, which are serious pests in our coffee and citrus plantations. Similar to the lady birds the larvæ of different kinds of lace wing flies (*Chrysopids*) are also predatory enemies of plant lice, mealy bugs, etc., but they do not appear to be so very effective as the lady birds for use on an economic scale. The larvæ of some flies destroying plant lice and eggs of mealy bugs are also known as friendly insects. Among other predatory insects useful for man, mention may be made of one—the caterpillar of a moth, *Eublemma scitula* (k)—which is very commonly found all over India exercising an efficient control over some important species of scale insects ; and another—a butterfly larvæ, *Spalgius epius*—which feeds ravenously on destructive mealy bugs of sorts. Besides these there are found stray cases of predatory beetles, insect-sucking bugs, and hunting flies, etc., which occasionally help the farmer ; but these are of minor importance compared to the Coccinellidæ and others noted above.

Coming to the parasitic forms, in the opinion of many experienced entomologists, the work of these insects is a very remarkable but little known phenomenon ; outbreaks of pests are often suddenly stopped as if by magic by these useful forms. The insect groups of the greatest importance in this work are the tachinid flies and the parasitic hymenoptera. The former confine their attacks mainly to caterpillars of various moths and butterflies, many of which

are among some of the worst crop pests, *viz.*, the swarming paddy caterpillar and the caterpillar pests of grasses, tobacco, castor, sunnhemp, groundnut, cholam, etc. But our knowledge of these flies and their bionomics is extremely limited. As far as the writer knows, one species, *Sturmia bimaculata*, appears to be one of the commonest in South India and known to parasitize some of the more important lepidopterous larvæ. With regard to the work of parasitic hymenoptera one cannot help repeating what the late Dr. Sharp has said: "the division parasitic hymenoptera," says he, "is one of the most neglected of the great groups of insects though it is perhaps of greater economic importance to mankind than any other." This large conceptus of parasites includes thousands of species exhibiting remarkable variations in structure and habits, and a thorough study of the bionomics of even a few of these interesting insects will not only help the economic entomologist who may wish to utilize them for pest control, but will be found to be of absorbing and fascinating interest even to the pure biologist. India abounds in numerous parasitic wasps carrying on their remarkable work of pest control often unknown and unnoticed by man, but unfortunately our knowledge of their life activities is very very meagre.

Utilizing Natural Enemies of Insects.

After having pointed out very briefly the importance and necessity for a thorough study of the insect friends of economic importance found in the country, with some information on what little has been attempted in that direction, we may consider the different methods in which such natural enemies may be utilized against insect pests to the best advantage. Some of these methods that might be adopted are simple and quite practicable in most cases Where plants are badly infested with pests, say caterpillars, or of different kinds of grubs, instead of the infested parts being removed and burnt or buried, as is at present done in most cases, they may be kept enclosed in cages with gauze netting to allow the natural enemies alone to emerge in due course; the mesh of the gauze should be of such dimensions that it will only allow the natural agent to fly out and not the adult of the pest, which, in most cases, is a moth or butterfly. This might be done not only in the case of various defoliating caterpillars such as those attacking paddy, cholam, castor, groundnut, palms, etc., but also with borers of sorts such as the stem borers, shot and fruit borers, of various valuable crops. For this purpose special cages or parasite boxes suited to each insect pest and its natural enemies could be devised; such boxes containing infested plants or portions of plants, which allow only the natural enemies to emerge, may be placed in the infested fields. Trials in this direction were made in the Punjab a few years ago for the cotton bollworms (*Earias sp.*) and on a small scale such a trial is now being made by the Madras Agricultural Department for the black-headed caterpillar (*Nephantis serinopa*) of cocoanut, a serious pest in some places along the West Coast. Similarly in the case of many pests of which the egg masses can be easily found and collected, as in the case of the paddy stem borer, the tobacco caterpillar, hairy caterpillars of sorts on cholam, castor, etc., and various others where the eggs are laid in masses, these latter may also be kept to allow any of the egg parasites to emerge; egg masses may with advantage be kept exposed on a tray of water or in the middle of an ant pan so that the egg parasites might fly away and any minute larvæ that might hatch out of unparasitized eggs might drown themselves if they attempt to crawl out. The stubble and debris of various borer-breeding plants like cholam, paddy, wheat, cane and various vegetable crops after harvest may also be treated similarly to allow any natural enemies that might breed in them. In these simple ways the existing parasites or predators in each tract might be helped to do their useful work more effectively; on the other hand, when the collected pests or the pruned branches containing pests are buried or burnt, as is usually done, the natural enemies also get destroyed. The adoption of such simple methods will substantially supplement the ordinary mechanical measures of control generally adopted at present.

But when it comes to a question of adopting the biological methods as a primary measure of pest control in cases where the ordinary mechanical methods are impracticable or uneconomical, arrangements of a more organized nature will be found necessary, if substantial and sustained benefits have to be derived. Such is evidently the case when we have to fight pests spread over extensive areas, and fixed insects like scale borers, etc., on fruit and avenue trees, some of which may be perennial. They cannot possibly be collected and brought together without great inconvenience and expense. To carry out a regular campaign of biological control, in the case of important crop pests, where the ordinary

mechanical methods have proved unsuccessful, the most important thing necessary is, in the first place, a plentiful supply of the predator or parasite ready for liberation in the infested areas. For, the liberation of only a few individuals has the disadvantage of these few separating from one another and spreading far away, thus preventing the chances of union of sexes and multiplication of the species ; in some cases there may not be present sufficient or any females in the small lot let out. In the simple methods described above of heaping collected material inside cages to liberate the natural enemies, we get absolutely no idea of the actual numbers liberated to form any correct estimate of the work of these natural agents. Another important factor that vitiates to a great extent the expected results of such simple methods, and which is overlooked very often, is the work of hyperparasites, parasites that attack the natural enemies themselves, not an uncommon phenomenon in nature. A braconid wasp (*Aphrastobracon flavipennis*) which the writer has recently discovered as a parasite of the useful scale-feeding caterpillar (*Eublemma*) is an example of such a secondary enemy spoiling the good work of a friendly insect. In the simple use of wire gauze cages it may not always be possible to keep back such secondary enemies and allow only the primary one to emerge. Yet another defect one has to guard against in such a measure is the probable contingency of the natural enemy being starved or destroyed when liberated in any tract either for want of sufficient food or becoming subject to the sudden and unusual climatic changes which might, in some unfortunate cases, affect the natural enemy very seriously. To guard against these and other incidental defects the best thing to do is to have these parasites and predators of known capacity reared in large numbers in field laboratories or insectaries under the supervision of skilled hands, and then distributed in batches to different infested areas whenever necessary. The study and elimination of hyperparasites, the question of sufficient food supply, protection from weather conditions, all these may be carefully attended to in captivity. The ideal natural enemy to be selected for such use should be one which would breed easily and plentifully in captivity, which has no enemies of its own and which would attack its host in any stage. This is the sort of work that is being carried on in countries where biological methods of pest control have advanced to some extent.

The United States, Gipsy Moth Laboratory at Melrose, Highlands, Massachusetts, is an institution of world-wide reputation which was primarily instituted to carry on investigations on the natural enemies and their efficiency against the Gipsy and Brown tail-moths which are very bad pests in some of the New England States. The field laboratories in different parts of California specially to fight the black scale and the mealy bugs of fruit trees are also well known. Such insectaries or field laboratories will not only help in affording the necessary facilities for the proper breeding and distribution of the natural enemies already studied as a routine, but would serve as institutions where all sorts of investigations and experiments could be safely and accurately carried on with various local and introduced insects of economic importance.

Search for Natural Enemies.

Before concluding the writer adds a few words on the subject of introduction of natural agents from one country to another, as distinct from the conservation of the native beneficial forms. This aspect of the question is far more important in countries where a good number of the cultivated crops are foreign, and the insects on that account mostly foreign introduced with the former ; these latter, deprived of their original natural checks in their new homes, often multiply remarkably and become serious pests. In such cases attempts are made to locate the original home of the pest and bring such of its natural enemies found there which keep it in control. As such, Australia, including many other colonies in the Pacific, South Africa and many parts of the New World are the regions chiefly interested in such search and importation of these natural agents. The most remarkable of such pioneer attempts is the well-known introduction of the famous lady bird beetle (*Novius cardinalis, M*) in 1889 by Koebele from Australia to California to fight the cottony cushion scale (*Icerya purchasi, M*), a very destructive pest of citrus trees in different parts of the world. As a result of the phenomenal success of this introduction this predatory lady bird beetle was taken to various other countries like Portugal, South Africa, Italy, Hawaii, Formosa, etc. The United States Department of Agriculture, ever since the establishment of their Parasitic Laboratory in Massachusetts, have deputed numerous parasite collectors in different regions of the East and imported several natural enemies for trial. More prominent among the later attempts are the trials with

the natural enemies of the black scale and mealy bugs in California, the fruit flies in Italy, South Africa, Australia and Hawaii, and the sugarcane pests in Hawaii. In 1907 and 1910 two Americans, Messrs. Compere and Woglum, visited India on similar missions ; Mr. Compere, who remained in Bangalore for some time where the writer had the chance of making his acquaintance, carried with him to Australia a hundred thousand live parasites of the Guava Fruit Fly (*Dacus spp.*) to try it against the dreaded Mediterranean Fruit Fly (*Ceratitis capitata*) in Queensland. Mr. Woglum came in search of parasites of the Citrus White Fly, a serious orange pest in Florida, and found a few lady bird beetles and parasitic wasps which he forwarded to America from the Punjab. Several examples of such attempts now made by entomologists in many countries may be added. It cannot be said that such attempts may not be necessary or useful in India ; it is quite possible that there may exist somewhere outside our country effective natural agents keeping in check pests which are the same or very similar to some of our own which are serious here, and in such cases, it would certainly be worth our while to introduce such forms and give them a trial.

Canadian Trade and Finance.

Montreal, October 1st, 1925.—Opening under most favourable auspices, aided by excellent weather and record crops, the Canadian harvest season of 1925 is now drawing to an end. Only three times in our history has the volume of the present wheat crop been exceeded and the winter wheat crop broke all records. Twice in the past we have had an oats crop equal to, or better than, the present one, while the barley yield promises to be the best in Canadian history. One of the factors giving added impetus to Western enthusiasm concerning field crops is the preliminary one dollar payment settled upon by the Wheat Pool, and many farmers already regard the present prosperity as an indication of permanent good times ahead, yet in farming as in every other industry there are checks on unlimited prosperity, and the present moment is a time when it may be well to broadcast a word of caution concerning the immediate future. In recent letters we have been optimistic concerning the world demand for Canadian wheat, but it is possible to attach too much importance to the immediate prospect, since the profitable prices of the last year have led farmers in many countries to sow wheat on land which is relatively less favourably situated. A recent bulletin from the United States Department of Agriculture, for instance, states that farmers are sowing enough more land to winter wheat so that with the ordinary proportion of abandonment a 40% increase in next year's winter wheat crop is well within the limits of possibility. This estimate is not based upon maximum figures but includes allowances for ordinary conditions and ordinary risks. There has also been a considerable increase in European production this year and further increases in winter acreage are anticipated both there and in Russia. It is as yet impossible to estimate the Russian surplus for this year so that only time can tell how large it will be next year. In each line of industry profitable prices tend to result in overproduction. While Canadian wheat land is so favourably situated that a substantial income from this cash crop may be anticipated, the fluctuations in weather conditions and prices are such that most farmers who place too much dependence upon returns from this source eventually meet disaster. It is because of this complex situation that the agricultural schools, the banks and the financial and agricultural papers of the United States and Canada have been making a concerted effort to encourage diversification.

With a whole year of uncertain weather and non-predictable acreage ahead, it is of course impossible to foretell volume of production or next fall's prices, but it is of the utmost importance that farmers who are now planning for next year, should include the possibilities of lower prices in their reasoning.

The old maxim concerning too many eggs in one basket implies the value of diversification for the farmer just as surely as it means that any other investor must beware of too great risks in any single venture.

Live-Stock.

The hog and cattle markets furnish excellent examples of constant fluctuations between scarcity and plenty. When prices are high the farmers raise more hogs and cattle than the demand warrants and prices presently react. After prices have been low for a period too few animals are raised and prices go up.

In 1923 and 1924 hog prices were down to pre-war levels. For some years corn had also been cheap, running as low as 75 cents a bushel early in 1924. The poor crop last year forced up the price of corn making the feeding of hogs quite expensive. Increase in the cost of feed accentuated the tendency towards increase in the price of hogs, and at present prices, hog raising is again profitable. The time element in the live-stock market is sufficiently important so that the fact that prices have been high for a period of less than six months indicates that there can be no great change in the volume of supply for at least a year, and probably for two years to come. In the past there has been approximately a five year cycle in the hog market, two years of increasing prices followed by two to three years of poor prices. Owing to the rapidity with which hogs mature and the numbers in the litters, the cycle here is much shorter than the one which is typical for cattle.

At present the stock of cattle on hand all over the world is being reduced, and the present depression cannot last much longer. In spite of the fact that pessimism is still rife in the cattle industry the present outlook is better than it has been for some years. One illustration of the probable trend in this industry may be noted from the tendency towards firmness in the price of hides and leather. Sole leather is now about 6 cents a pound higher than at this time last year. While the whole leather industry has gone through very much the same depression that has characterized the general cattle industry, yet we know that the prices for calf skins are firming more rapidly than general hide prices, and this in itself is a further indication of a shortage of animals which must soon make itself felt in the price tendencies. The relative price of cattle as compared with other commodities has been low since 1919. This in itself constitutes the six year period, so that those who are studying the cycle of cattle prices feel that the present tendencies indicate that better conditions are at hand.

Business Conditions in U. S.

When one compares the volume of current business in the United States with the volume that was being carried on in 1921, one becomes more and more impressed by the fact that there is steady improvement in almost any line that can be mentioned.

The impressive list of favourable conditions includes low interest rates, good prices for agricultural products, increasing production of lumber, iron, steel and other manufactured commodities, particularly automobiles, increased building, a high level of employment and steady distribution as measured by the returns of both mail order houses and department stores.

We may consider these indications of prosperity under three headings. In the first place let us consider basic production. With excellent crops in all parts of the country, good demand for mine products, a high level of manufacturing activity and the railroads reporting good earnings and high efficiency, there is every indication that the present program of basic production is in excellent balance.

In terms of buying power we find that large crops sold at high prices mean great buying power in the hands of the farmer both in the South and West. With wages at 220% of pre-war level and a high level of employment the buying power of labour is good throughout most of the country.

In terms of finance we find that the rate on money is low and that there is so large a surplus seeking investment that millions have to be invested abroad. No great financial strain is anywhere evident. There are no factors of importance tending to weaken the situation.

The United States with its growing population, its steadily increasing and well balanced productivity, and its wonderful financial position is in a period of remarkable expansion. So long as production remains in balance there is obviously no reason why the consumptive capacity of the country cannot increase to keep up with this production. We note the large number of automobiles being manufactured and sold on credit but so long as the real needs of the country are met, there is no reason why there should not be increasing use of automobiles both for business and pleasure. In fact it is only by increasing the variety of goods used that it is possible to keep consumption abreast of increasing production. There is a limit to the amount of foodstuffs and other vital necessities which can be consumed by any given population, but as this same population turns to radio, moving pictures and other pleasures, its wants may be indefinitely expanded. So long as such elaboration remains balanced there will be no deficiency in any of the prime necessities nor too great surplus in any single direction. It would seem that under such circumstances there would be no definite limit to the

consuming power of a country. The old bogey of overproduction will cease to worry the world when industrial forecasting reaches a point where it is possible to keep this desirable balance between demand and supply. Most factors are so favourable in the United States at present that there is no basis for fear of depression for some time to come. Any temporary checks and recessions which may be experienced should be merely the result of efforts to maintain this desirable balance.

Canadian Foreign Trade.

The August foreign trade figures from the Dominion Bureau of Statistics indicate a tremendous gain in Canada's foreign business. August exports show an increase of 38 millions in value over those for the same month in 1924 and the imports gained $20,000,000. These gains are well distributed through all the fields of activity. There were $20,800,000 greater agricultural exports than in 1924, $7,500,000 greater exports of animals and animal products, a $3,600,000 increase in forest products, $1,200,000 in iron and steel and their products, and a $3,000,000 increase under the heading "other ores". Every single classification both among exports and imports show some gains and in some classifications the gain is most remarkable. For the five months of the fiscal year up to the end of August, the exports exceed last year's by $61,000,000 and the imports exceed last year's by $41,000,000. Certainly such figures may be taken as an indication of the steady improvement which is taking place in basic conditions in Canada.

Industrial Notes from U. S. A.

World Supply of Cereal Foods.

New York, 1st October, 1925.—The countries which find it necessary to import considerable quantities of cereal foods will perhaps be interested, especially in view of the recent announcement that the wheat crop of 1924 is likely to be below normal, in some data showing the increase in the world's producing power in other food cereals. While it is true that the world does rely to a great extent upon wheat as its chief cereal food, the enormous quantities of other grains available for food either in the natural state or transformed into meats suggest that the slight fall off in the world's wheat supply in the current year may not prove so serious when we consider that the world production of other food cereals has very greatly increased in recent years.

Even in the matter of wheat, world production down to and including 1923 showed a larger outturn than in earlier years and thus a growth in producing power. The latest reports of our Department of Agriculture, which ransacks the world for data on grain and other food production, puts the estimated world production in all countries for which it can obtain data at 3,692,000,000 bushels of wheat in 1923, or more than that of any year since 1915, while that of other cereals used as food for man show also in 1923 a larger outturn. Rye, which is used as a substitute for wheat in a considerable number of countries, shows, according to these figures, 1,431,748,000 bushels in 1923, or a larger total for the countries included in the tabulation than in any year since 1916. Oats show a world outturn in 1923 of 4,143,000,000 bushels which is more than in any year since 1915. Corn shows a total in 1923 of 4,201,912,000 bushels or more than the annual average since 1912, and 131,000,000,000 pounds of rice in the crop year 1922-23 in all countries for which figures are available, which is more than the annual average of the past twenty years. Of potatoes, also important as a food supply for man, the world total of 1923 is put at 3,423,000,000 bushels, or more than the annual average of the 3 preceding years. These figures, while, of course, they prove nothing as to the supply of last year's crops yet available, are encouraging in the fact that in practically every instance the quantity now produced in the world is above that of preceding years and especially since the opening of the World War. With the 1923 production of nearly all of the great food staples larger than that of preceding years, it would appear that the world's producing power in the agricultural products required for food is now higher than at any time since the opening years of the World War, and that even a temporary shortage in wheat supply will not probably prove as serious as would have been the case but for the greatly increased production of other cereals in recent years.

Still another fact of interest to the food importing countries is found in the latest

official figures of the United States Department of Agriculture regarding American production of the material of this character, for it is a fact that not only all Europe but considerable sections of Asia draw upon the United States for its wheat and flour and rye and other food cereals. The latest report of the Department of Agriculture on the crops of 1924 indicates that in a large proportion of the cereals other than corn the outturn of the current year is in excess of the crop harvested in 1923; the October estimates of wheat crop for the current year put the 1924 output at probably 856,000,000 bushels against a harvested crop of 786,000,000 in 1923, rye in 1924, 65,800,000 bushels against 63,000,000 in 1923, oats 1,509,000,000 bushels against 1,300,000,000 harvested in 1923, potatoes 424,000,000 bushels against 412,000,000, though it is necessary to add, in the interests of accuracy, that the farm prices quoted by the Department of Agriculture for 1924 are in nearly all cases higher than those of 1923.

From the above official figures of the United States Department of Agriculture which covers the whole world in its study of food production, it seems quite apparent that the world's producing power in foodstuffs and especially cereals is now standing at a considerably higher level than at any time since the opening years of the war, and it seems quite probable that the per capita supply of cereals used for food purposes in 1923 was materially above that of any year since 1915, which to that extent at least minimizes the occasion for special anxiety on the part of the countries finding it necessary to import grain foods.

Needless Coal Mine Accidents.

In the United States we are killing coal miners three times as fast as they kill them in Great Britain. Over a period of ten years (1911-1920) the average fatality rate has been 1.2 in Great Britain and 4.3 in the United States. In the bituminous coal industry of the United States we find the fatality rate still higher than for the coal industry as a whole. During the ten years to 1922, the United States Bureau of Mines reports that at the bituminous coal mines alone there were killed 18,243 miners, the average fatality rate being 4.30 per 1,000 employed. Of the average of 1,824 bituminous coal miners killed each year about one-half met their death from falls of roof and coal, about eighteen per cent were killed by mine cars and locomotives, about twelve per cent by gas and coal dust explosions, and the remaining one-fifth lost their lives from other causes. No general statistics are available on non-fatal injuries in the bituminous coal industry, because there is no uniformity among the states in reporting such accidents. This "daily sniping" of miners underground is not yet counted for the whole country. This is a record of striving for large output with less consideration for safety than for both high dividends and high wages. Officially it is a record of decentralized administration—of protective state regulations that differ almost as much in character as does the degree of their enforcement from state to state. It is a record at best of tardy adoption of safeguards—lagging years behind engineering knowledge of what can and ought to be done. It is a record of appalling and needless loss of property as well as human lives, which have been sacrificed to speed, greed, and indifference to the public interest. I believe it is a reasonable statement that two-thirds of the fatal and serious accidents at the bituminous coal mines of this country could be prevented by the universal adoption of safety methods already in successful operation at some of the mines of this country or in Great Britain. One of the most effective reforms that experience in England and demonstration here has proved should be adopted without more delay is the use of rock dust to check the spread of coal dust explosion. While making inquiries in Europe I learned that France and England compel the use of shale or rock dust by national law. It has been clearly demonstrated that gas and coal dust explosions can be limited and controlled by the intelligent use of such dust. And yet there are not, to my knowledge, more than three substantial coal companies in America that are using this simple, reasonably inexpensive, and effective safeguard against coal dust explosions. Sixteen times during the past twenty-three months the first pages of our newspapers have carried the grim story of fatal explosions. Already in the first four months alone of 1924 five "major" explosions in coal mines have taken 382 lives! In 1923 265 miners were killed in five "major" coal mine disasters. These tragedies followed a series of eleven "major" explosions in 1922 which caused the death of 264 men. In ten years we have killed nearly 25,000 coal miners! As Director Bain of the United States Bureau of Mines has publicly stated: "The great explosions should not be considered to be normal occupational accidents. Investigations carried on by the Bureau of Mines for more than ten years have demonstrated beyond

question of doubt that such spreading of explosions by coal dust can be prevented. Responsibility for this rests upon the mine managements. * * * Explosions can and must be prevented."

The Motion Picture Industry.

Motion picture films exported from the United States in the fiscal year just ended were sufficient in length to more than stretch twice around the globe at the equator. Their value in the single year was approximately eight million dollars, and the aggregate value of the films exported since they entered international trade is approximately 100 million dollars. It is less than twenty years since the motion picture film became a factor in the foreign trade of the United States. In fact, it is less than thirty years since Thomas Edison and those associated with him in that line perfected the moving film system in combination with the shutter, by which a series of photographs of a moving object could be made at such close intervals as to present to the eye a continuous movement. The development of this entirely new idea and its application to the combined industries of production of the photographs and their presentation to the public moved slowly and it was only in 1912 that the world so realized the importance of our motion picture film as to justify the Department of Commerce in including motion picture films in its list of articles exported. Since that time the exports of films have ranged from sixty-two million feet in 1912 to more than 200 million feet a year, going as high as 272 million in the exceptional year, 1919. But even this huge exportation of films having an export value of over ten million dollars is a trifle when we compare it with the figures representing the domestic industry of film making and its use in the United States, for it is estimated that the film manufacturers of this country turn out an average of sixty-five million feet a month, or 148,000 miles a year, of which apparently about two-thirds is in use in this country and the remainder exported. While, of course, the manufacture of motion picture films is not confined to any single country, it is estimated that the United States is by far the largest producer and probably turns out about two-thirds of the films produced in the world. The total number of motion picture theatres in operation in the United States is now set down by parties familiar with the subject at 17,000, against about 4,000 in Germany, 4,000 in Russia, 3,500 in Great Britain, and 3,000 in France. And these same experts put the total number of motion picture theatres the world over at about 50,000 of which, as above indicated, about 17,000 were in the United States, the birthplace of the motion picture. New as the industry is, it represents big investments both by manufacturers and producers. The census of 1919 showed the capital of the fifteen establishments making plain or unexposed films at $44,000,000, and that of the fifty establishments making the "projection" films, on which the scenes are photographed and thus made ready for use in the projecting machine which presents the picture on the screen, $37,000,000, to say nothing of the fact that the mere manufacture of the machines required capital of 2½ million dollars. The output of these three groups of establishments, the unexposed films, the projection films, and the machines by which they are made, aggregated $110,000,000 in 1919.

All the World Rides in American Automobiles.

All the world is riding in American automobiles. The official records of the export trade of the United States indicate that the world sent us $185,000,000 in the purchase of American automobiles of all sorts in the ten months ending with October, suggesting that the total which the outside world will pay for American automobiles in the calendar year 1924 will exceed $200,000,000, and these figures are merely those of the value of the machines when exported and do not attempt to represent the sums which the purchaser pays. Curiously every country of the world wants the American automobile irrespective of the home production of machines of this class or whether or not their highways are prepared for their use. We should scarcely expect to see the older manufacturing countries of Europe, with their enormous manufacturing capacities and establishments, coming to the United States to buy this class of our products, yet the latest official figures of the government show passenger automobiles sent to the great manufacturing countries of Great Britain, France, Italy, and practically all the rest of Europe among other countries, are also taking them. Australia, for example, with enormous areas and highways stretching across sections popularly known as "desert" has taken in the nine months ending with September of the current year no less than 30,250 passenger automobiles with a value of $20,745,000; and this to a country with a population of but about 6,000,000.

China, in which the highways are reported as especially suited to the more primitive vehicle, took in the nine months of the current year 835 passenger automobiles against 549 in the same months of last year. Japan, where the highways were originally prepared for the lighter vehicle, took this year 3,866 passenger automobiles against 2,241 in the same months of last year. To the great manufacturing country of Great Britain we should scarcely expect exports of this character yet the figures of the nine months of 1924 show 4,171 passenger machines sent to that country with a value of over $3,000,000, while to Italy, a large manufacturer and exporter of machines of this type, the number sent in the nine months of this year shows 1,825 against 1,494 in the same months of last year. To the Scandinavian countries the total of this year is about 3,500 machines; to Spain 3,809; to Argentina 8,222 against 3,991 in the same months of last year; Brazil 3,584; Uruguay 2,854; Central America as a whole 902 machines; Mexico 5,860; and Cuba 6,409 against 4,188 in the corresponding months of last year. India took in the nine months of this year 1,863 machines; Dutch East Indies 1,022; Philippine Islands 1,656; New Zealand 3,168 and our next-door neighbour, Canada, 7,388, while much of the Canadian market is supplied by branch factories in Canada owned by American automobile manufacturing establishments. This list of countries to which the machines are sent does not by any means include all the countries to which American automobiles are being exported. The number of countries to which passenger machines were sent in 1922, the latest year of complete record, is nearly 100, and includes Egypt, Hejaz, Kwangtung, the Canary Islands, Iceland, most of the Central American States, Siam, Liberia, Morocco and Algeria.

Economics in the West.

Taxation and Co-operative Societies.

London, 3rd October, 1925.—The Chancellor of the Exchequer, in his speech on the Consolidated Fund Bill on August 7, said he did not wish the public to be deluded by the idea that some great reduction of £100,000,000 or £150,000,000 in the annual expenditure of the country was possible at the present time. He also estimated that, after deducting the debt charges, pensions, and other annual expenditure which must be met and applying the necessary ratio, the figure really comparable with an annual pre-war expenditure of £205 millions a year was £214,000,000, which he himself described as a surprising figure.

It is not proposed in this article to discuss the Chancellor's calculation, but rather to accept for the moment his belief that it is not possible to secure any great reductions in national expenditure. The burden of taxation is now almost unbearable, and any reductions which may be secured by the Committee which has been appointed will all tend towards giving relief. The Chancellor can do little to secure reductions in local expenditure unless he and his colleagues in the Government decide that a good deal of the recent legislation which has increased expenditure should be repealed.

Co-operative Profits.

In such circumstances it may well be asked whether the burden of taxation is fairly distributed, and when we find that in these days a large volume of trade in the country is being done without paying taxation, it is time that the Chancellor gave serious attention to what he is losing in the way of revenue. What is the exact position? It is simply this—That any number of persons engaged in all classes of occupation may band themselves together and form what is known as a co-operative society. They can register themselves under the Industrial and Provident Societies Act and then begin a distributive trade for their mutual benefit. They need not confine their operations to those who have banded themselves together as the society.

At the present time there are over 4,500,000 persons in this country who have banded themselves in co-operative societies, and there are millions of others outside to whom these societies distribute goods. In 1923 the sales of these societies in the supply of general commodities, coal, refreshment, and miscellaneous articles, retail and wholesale, amounted to some £250,000,000. There was a profit on this trade and it was allocated as follows:—£3,600,000 was distributed as interest on shares; £11,600,000 was given back as dividends on purchases; and some £58,000 was distributed as bonuses to the employees. If that trade had been done by one, five, ten,

or twenty firms, it would have paid a very handsome contribution to the national revenue by way of income-tax. But because it is done by a great number of societies and because the profit is given by way of a dividend on purchases, or in fact by means of articles, instead of cash, it escapes taxation.

Statute of Mortmain.

It will be obvious to anyone that if we can all become co-operators we shall be able to deprive the national exchequer of a good deal of revenue. The privileged position of co-operative societies to-day is very similar to that of the Church before the passing of the Statute of Mortmain in 1279. In those ancient times the Sovereign of this Realm was able to call upon the holders of land to provide him with men to bear arms against his enemies, but the lands held by the Church and religious bodies were exempt. Thus in the course of time, through the Church by gift and by other means securing large areas of the country, the area from which men could be drawn to serve the Sovereign was reduced. The arms-bearing area which provided the Sovereign with his soldiers was curtailed. It was to prevent such encroachments that the Statute of Mortmain was passed in 1279.

During recent years co-operative trading has been encroaching upon the trading area from which the Chancellor of the Exchequer draws the national income, and the time has arrived when a new Statute of Mortmain is necessary, not to prevent the Church from buying land, but to prevent any trading body in this country from avoiding the duties and taxes which are imposed on all subjects alike. If some such legislation is not passed, the trading area exempted from taxation will grow still more until at last everyone will be in this co-operative movement—sheltered and relieved from national taxation burdens.

The position would appear to be well known. The late Mr. Bonar Law recognized it when he said "Co-operative societies are doing an exceedingly large share of the retail trade of the country, and although they do not make profits in the ordinary sense, it comes to this, that that immense share of the trade is done without paying the share to the revenue which is borne by the other traders." He thought something ought to be done to remedy that position. Again, Mr. Austen Chamberlain has said "The effect of the co-operative movement is to withdraw from taxation a great field of revenue which formerly contributed a large share. It withdraws from the field of taxation perfectly legitimately, because Parliament does not tax business transacted in that form, a great deal of business which formerly contributed a share to the revenue. It thereby casts a heavier burden on those who do have to contribute. The greater the success of the movement, the more intolerable that position becomes for everybody else, the more impossible it becomes for the revenue authorities, and the more certain it becomes that in some form or another the co-operative societies must contribute their share to the common necessities of the State."

The Repression of Children.

"To-day Scotsmen are what they are because we have got a little ahead of some other countries in the matter of education," boasted Sir Robert Horne, M.P., at a luncheon recently in connection with the City of London Vacation Course. He was perfectly certain, he said, that John Knox never realized the result which could be produced by his system of planting in every place in Scotland schools compulsorily supported by revenue of the land. To that fact more than to some gift of character or resoluteness of will Scotsmen owed the part which some had played in the world of thought and action. Mr. Frank Roscoe, lecturing on "Modern Educational Theory," criticized the atmosphere of repression pervading many schools.

"One of the tyrannies of school life is in the iron standard desk and the dual desk", he declared. They don't give children an opportunity of practising civil behaviour. Boys need not be made to sit behind each other in perfect order in a classroom.

Some repressions are necessary, but they must never be used as an end in themselves. The repression of physical activity is harmful to the child, and in family life is often based on adult selfishness. How often the child is told to be quiet 'Father wants to sleep,' or that he must not make a noise because 'Motor is resting'.

The average town school to me seldom suggests anything in the nature of an educational establishment. The iron railings, asphalt playground, rooms with little attempt at ornament, and austere stairs give the place a character unsuited for the larger educational purpose of development.

Wrong Idea of Discipline.

The conception of discipline based on the idea of passivity is entirely wrong. True discipline is an active thing in preparation for the larger social life outside the schools.

That idea of docility is responsible for the idea that the child is a miniature adult. He is no more like a grown-up than a tadpole is like a frog.

Mr. Frank Jones, lecturing on "English", said that even those who advocated modern methods of teaching languages recognized the importance of grammar. If they cut out our grammar altogether they would have no success in teaching anything. But he advised postponing the teaching of grammar as long as possible.

Australian Tariff Policy.

The new tariff changes in Australia are attracting considerable just now in England. The general effect of the alterations will be to give considerable advantage to a number of British industries, and it has been pointed out that while it was the expressed intention of the Australian Government to foster certain home industries, the Ministry was desirous of doing so without prejudicing British interests more than was absolutely necessary. On the whole, the Australian tariff has been well received here by those who have taken the trouble to examine it carefully. Naturally there has been some criticism, but on the whole it has been recognized that the Australian Government has made a sincere effort to reconcile what it conceives to be the interests of Australia with those of the Mother Country. The duty on cotton tweed has been severely criticized in Manchester, and we are disposed to agree that the cotton tweed exporters have been somewhat harshly treated. There seems to be a clear case for suggesting to the Australian Government that the operation of the duty should be suspended until there has been time to clear stocks. We think it is not at all unlikely that if the Australian Government be approached in a proper manner it may be disposed to accede to the request. The trade is very small, and it would be unfortunate, to say the least, if an agitation on a single item should lead the general public to get a false impression of Australia's tariff policy as a whole.

Company Law Reform.

The huge losses, running into many millions of pounds, that the textile trades of Lancashire have incurred as a result of the activities of fraudulent traders have emphasized the need of a reform of company law. A memorandum on this subject has been prepared by the Commercial Law Committee of the Manchester Chamber of Commerce, and is to be forwarded to the Board of Trade Committee on Company Law Reform. In regard to the increasing use of the private company it is pointed out that when a private trader winds up his business the whole of his private fortune is pledged to settle his debts, but, in the case of a company, only the share capital of the company is pledged to meet the company's debts. That places a temptation before the private trader, when he is in financial difficulties, to convert his business into a private company and thus limit the extent to which creditors can call upon his private fortune. Modifications of the law in that and other directions are suggested.

Lyons and Artificial Silk.

M. Fougere, President of the Silk Federation, recently made an interesting statement regarding the future of silk and artificial silk in France. He said that the world's production of natural silk was assured and would be sufficient during the next quarter of a century, even if consumption should be doubled. The problem for France was to become as far as possible independent of supplies from the Far East.

Without going into details regarding the efforts made to increase silk growing at home he could state that they had proved far from ineffective, and that cocoon production in the South-East and in the Centre would no doubt be augmented. He foresaw that wine growing would go hand-in-hand with the cultivation of the mulberry, in pursuance of the example set by Italy, where the annual output of silk grew from 3,000 tons before the war to 6,000 tons at the present time. European silk was incontestably superior in quality to Asiatic silk. He estimated that French consumption of silk, which was now 6,000 tons annually, would be double that amount in 25 years.

On the subject of artificial silk M. Fougere added that the world's production was at present 40,000 tons, and was likely to be trebled within five or six years. He believed that consumption would keep pace. He believed also that by means of a radical transformation of the qualities of artificial silk this product would prove to be a valuable help to the industries of Lyons. On the other hand, it would take a position of growing importance by the side of other textiles—namely, wool, and cotton—in combination with which it would be put to an ever-increasing number of uses. In short, M. Fougere foresaw great progress on parallel lines in the production as well as the consumption of both natural and artificial silk.

The growth in the employment of artificial silk referred to by M. Fougere is, in fact, already proceeding rapidly. Its use is spreading in the St. Etienne ribbon factories and in connexion with furnishing fabrics, whilst its employment in combination with cotton, linen, and wool is advancing speedily. Similarly, makers of hosiery are embodying artificial silk more widely in their garments. Further, it is believed in Lyons that the manufacture of ornamental fabrics for Church decoration, which has recently passed through a severe crisis owing to the high price of real silk, will be revived through the adoption of the artificial product. Velvet manufacturers are also finding it of utility owing to its resistance.

Swiss Hydro-Electric Development.

Switzerland has no coal mines, except a few seams of inferior quality, and all the coal she uses is imported from Germany, France, Belgium and Great Britain. Imported coal being nearly all transported by rail is rather expensive, particularly as the Swiss railway rates are very high. At the outbreak of the war Switzerland was placed in a very difficult position ; imports of coal were practically stopped, Switzerland was forced to accept the drastic terms asked by the French and German coal exporters, and at one time the price rose to over £8 a ton. The dearness and scarcity of coal accelerated the development of the Swiss water-power resources. Some time before Swiss engineers had been studying the problem of electrifying the main lines of the Federal Railways and of providing the industrial centres with a regular and cheap supply of current. Under the pressure of circumstances these different schemes were pushed forward with energy—artificial lakes were created in the Alps, rivers and lakes harnessed, and power-stations erected, with the result that the capacity rose from 500,000 h.p. in 1914 to 1,570,000 h.p. at the end of 1924. A number of power plants are now under construction, and when they are ready —in the course of next year—an addition of 407,000 h.p. will be made, so that out of a total water-power estimated at 4,000,000 h.p. some 1,977,000 will be utilized, or nearly 50 per cent.

New Method of Producing Films.

"Jealousy," a Ufa film produced this week in Berlin, directed by Karl Grune, whose artistic reputation is already known abroad, is remarkable for the new technique it displays. By a method patented under the name of the Schuftan system, the buildings necessary to the plot are no longer manufactured life-size either in grounds of the film company or in their studio. They are small models of what is required, magnified by an arrangement of mirrors to such an extent that they are photographed by the camera lens as being of normal construction. The experiment is not quite perfected, as the lights reflected from illuminated windows and street lamps do not react to the lens in quite the same way as the dark masses of shadows. The patent has been brought by America already, and it is firmly believed that very soon the days will be past when expensive architecture, to be destroyed after one or two pictures have been taken, runs away with the shareholders' money before a single picture is taken.

Cotton Basis.

While there is no doubt that there will be a sufficiency of cotton, Lancashire seems to be destined to have to pay—in the form of "points-on"—more than last season for good twist cotton, which is chiefly grown in Texas. Recently there has been a rise in the basis—otherwise known as points-on—of about 20 points for ordinary qualities and 30 points for the better ones. This, however, is partly due to shippers being caught "short". Feeling confident of a bumper American crop certain merchants sold considerable quantities to Russia, among other countries, without covering, and when they went to the grower they found him in a very strong position. Quite apart from this temporary influence, however, the partial failure of the Texas crop is a handicap to Lancashire, as futures, which are always quoted, take no account whatever of the "basis". The position in this respect is being carefully watched.

A Rail Aeroplane.

Glasgow is to be the scene of an experimental installation of the "Railplane", invented by Mr. George Bennie, of Bute, to relieve traffic congestion.

Aerial cars driven by air screws are suspended from overhead guide rail structures and carried over existing railways or roads. Automatic signalling and braking provide for safety.

"As a means of linking up two or more important centres, such as Liverpool and Manchester," says *The Railway Gazette* "and affording safe, rapid, comfortable and cheap transport, great possibilities are claimed for the system....

"It is considered that maintenance costs would not exceed £300 per mile per annum."

The journal adds that the operating costs should be much below those of any known method of transport, and that speeds of 120 miles an hour could easily be attained on the level or down grade.

German Dye Trust.

The negotiations which have been carried on for som time past at Frankfurt, between the large works belonging to the German dye trust, with the object of merging the concerns into one firm, have led to an understanding in principle. As to the method and the date of carrying this plan into execution, nothing definite has been agreed on. When complete, the amalgamation should constitute one of the largest in the history of German industry. It is designed to achieve greater economy in administration and working, and a more practical division and distribution of work, without destroying the individuality of the concerns.

Economic Notes.

More Power for Mysore.

The full text of the Mysore Government order of last month sanctioning the seventh installation of electric energy at the Cauvery Falls has been published. According to the order in December last the Chief Electrical Engineer submitted reports and estimates, the latter amounting to, approximately, Rs. 87 lakhs, for the generation of an additional 14,000 h.p. at Sivasamudram and a 10,000 h.p. at Krishnarajasagara (the Cauvery Dam) to meet the growing demands for power in the State. Then, after some correspondence with the Public Works Secretary on the subject the Government decided on the subjoined detailed terms: The total power that is now being generated at Sivasamudram is about 32,000 h.p. and the whole of this power has been already taken up, the maximum load on the generating station on November 27, 1924, having been 32,113 h.p. The immediate demands for additional power aggregate to about 10,264 h.p., of which the obligated load comes to 4,012 h.p. and power applied for but not obligated comes to about 6,252 h.p. To the above must be added the normal growth for the demand in the several sections for small industries, lights, fans and other domestic purposes during the next three years. A conservative demand under these heads is estimated at 2,570 h.p., by the Chief Electrical Engineer. The total demand to be provided for during the next three years works out to 4,012 plus 6,252 plus 2,570 equal to 12,800 h.p. say. After investigating various schemes for generating the additional power required, Government found that the water stored in Krishnarajasagara, which is now raised to plus 106, could, for 20 to 25 years, be used for the generation of an additional 14,000 h.p. at Sivasamudram, *i.e.*, until the completion of the high level canals and the irrigation thereunder fully developed. Proposals were accordingly called for to utilize the additional supplies that could be made available from Krishnarajasagara, for some time to come and the Chief Electrical Engineer has submitted the seventh installation proposals and estimates amounting to Rs. 87 lakhs nearly providing for the generation of 14,000 h.p. at Sivasamudram and 10,000 h.p. at the Krishnarajasagara dam site, together with the necessary transmission line, remodelling and extensions to the receiving stations and distribution systems in the Kolar Gold Fields, Bangalore and Mysore Cities.

Technical Expert.

After a careful consideration of the matter, Government consider that it is not advisable to take up power generation at Krishnarajasagara till the surveys and investigation for the additional 110,000 acres of irrigation are completed and the irrigation policy and programme are definitely sanctioned. Accordingly, they are pleased to sanction the seventh installation project for the development at the Sivasamudram generating station and for the subsidiary works to transmit and distribute the additional 14,000 h.p. on the Kolar Gold Fields and at Bangalore and Mysore at a total approximate cost of Rs. 45½ lakhs postponing the development of the Krishnarajasagara station for the present. Separate orders will be issued in regard to the re-construction of the Mysore transformer station. The Chief Electrical Engineer is requested to sumbit without delay the detailed estimates for the generation of 14,000 h.p. and connected works as also a complete specification of plant and machinery for sanction of Government and to enable arrangements being made for the purchase of

the machinery through the Stores Purchase Committee. The estimates and proposals have been subjected to examination and scrutiny by Sir Alfred Dickinson who was engaged as outside technical expert and have been declared by him to be sound and satisfactory. The Chief Electrical Engineer will devote his attention to the suggestions given by the technical expert on several matters of detail. The proect was also placed before the standing committee for finance and taxation and has been approved of by them. As regards the financial aspects of the scheme sanctioned, it is expected that the first unit of the seventh installation will be put into serivce 18 months after first starting the work and the whole work will be completed in 36 months yielding an additional revenue of Rs. 5¾ lakhs per annum in 18 months and Rs. 18.5 lakhs per annum in 36 months, representing 40 per cent of the total cost. When all extra power is taken up, the revenue will be about Rs. 20 lakhs per annum, or about 43 per cent of the total cost. The expenditure in the current year should be limited under a well-defined programme to Rs. 20 lakhs, the sanctioned grant in the capital budget of the current year.

Joint Stock Companies in Bombay.

"There has been a slight increase in the registration of new companies compared with the figure of the previous year", says the Registrar of Companies, Bombay, in his last Annual Report ; "but so long as the depression in trade continues the increase is likely to be small." During the year under report, 72 new companies were registered as compared with 55 in the previous year. Thirty-two were public companies having a nominal capital of Rs. 1,92,36,700, and 34 private companies with a nominal capital of Rs. 6,81,02,000. Six were companies limited by guarantee. Twenty-two companies incorporated outside British India set up their places of business in this Presidency during the year. Referring to the submission of returns by Companies, the Registrar says : "Some of the larger companies who have a great number of shareholders and many transfers of shares appear to find a difficulty in filing their Summaries and Annual Lists of Members within the time prescribed by the Act. The period of delay is now less than formerly and I have abstained from taking steps against them where I was satisfied that they were making efforts to comply with the law. There has been a distinct improvement in the filing of returns by companies in general but a number of companies still appear to take too long a time to submit their annual accounts to the shareholders." Two companies and their Managers were prosecuted for infringing the provisions of Sections 103 and 136 of the Indian Companies Act and carrying on business without filing the required declarations and statements. Several private companies failed to submit the annual returns in time. These were warned and their statements were accepted late without prosecution. The total number of companies working at the close of the year was 854, of which 599 were Public, 228 Private, and the remaining 27 Limited by Guarantee. The aggregate capital—Authorized, Subscribed and Paid-up—of all companies was Rs. 2,32,13,32,814, Rs. 1,40,50,82,561 and Rs. 1,03,15,56,735, respectively as against Rs. 2,38,51,14,064, Rs. 1,41,14,19,639 and Rs. 1,00,07,20,883, respectively in preceding year. There has thus been a net decrease of Rs. 6,37,81,250, Rs. 63,37,078 respectively in the Authorized and Subscribed capital and a net increase of Rs. 3,08,35,852 in the Paid-up capital of companies during the year.

Rural Water Supply.

The Bombay Government have decided to appoint a special officer (of the rank of Superintending Engineer) for a period of one year to investigate the question of minor irrigation works such as wells, bandharas, tanks, etc., and of village water supply as a measure for the prevention of famine. The work to be done by this officer will be on the following lines :— For the purposes of the present scheme, wells will be divided into two categories, *viz.*, irrigation wells and drinking wells. The Commissioners of Divisions, in consultation with the Collectors in their Divisions, will prepare (*a*) a list of precarious tracts in which irrigation wells are required, and (*b*) a list of villages in all tracts in need of improved supply of drinking water for man and beast. The Water Diviner already appointed will ascertain where wells can be sunk for these purposes. The services of this officer will be placed under each of the Commissioners in rotation for a period of four months and he will work directly under their orders during those periods. Two fast working power-boring machines are to be placed at the disposal of this officer for carrying out boring wherever he has indicated the existence of water. In order to allow the public the full benefit of the advice and assistance of the services of the Water Diviner, applications will be invited both from private persons and local bodies, and considered by

the Commissioners who should arrange to include such of them as are considered desirable in the programme of work. As regards *bandharas*, the Special Officer will carry on investigations for the repairs of the existing bandharas and constructing new ones in the districts of Nasik, Satara, Belgaum, East Khandesh, Ahmednagar, Dharwar, West Khandesh and Poona.

He will also report on the possibility of constructing Dharans in all precarious tracts. As regards tanks, both existing and new, the investigations of the Special Officer will be confined to such districts as are recommended by the Commissioners on account of their utility. All existing data available will be examined and proposals made for the improvement of old tanks, where improvement seems possible or desirable, and also for the construction of new tanks wherever he thinks advisable. In making proposals regard will be had not merely to the actual return to Government in the shape of interest on capital invested but also to the indirect benefit that would accrue to the cultivators concerned. No major irrigation work will be included in the investigations except under special instructions from Government. A thorough investigation into the question of drainage in Gujarat will be made and proposals submitted, particular attention being devoted to the question of leading drainage water into tanks. The opportunity will be taken of examining the Tahal system and giving advice to the cultivators especially in the direction of constructing Tahals on co-operative lines with the help of tagai loans. The headquarters of the Special Officer will be at Poona.

Work of Yeravda Reformatory.

According to the annual report, there were 144 juveniles in the Reformatory School at Yeravda at the end of last year. Of these, 102 were Hindus, 37 Muhammadans and 5 Christians. The general behaviour of the lads was satisfactory and insubordination or disobedience was conspicuous by its absence, says the Superintendent of the Reformatory School. "The number of minor offences was 29 involving 38 boys, while only one boy, a new comer, tried to escape but was soon caught and brought back to the Reformatory. Caning, loss of monitorship, penal diet, etc., were the ordinary punishments inflicted for breaches of discipline." Tailoring has been added to the five trades already taught in the school, where 25 boys are engaged in carpentry, 17 in smithy work, 19 in painting, 13 in bookbinding, 11 in tailoring and 59 in agriculture or gardening. Primary instruction continues to be given in the school up to Marathi and Gujerati 5th standard, while arrangements are being made to give instruction in Urdu also for the benefit of the Muhammadan boys. Special attention is given to moral instruction, and a special feature of the school is the direct participation of the staff in all school games. There were 40 admissions to the school during the year while the number discharged was 47. The after-career of the 102 boys discharged during the last 3 years shows interesting results. Only 9 of them appear to have been reconvicted, 15 are untraceable, and one is dead. The remainder are in employment or are with friends. The gross maintenance charges amounted to Rs. 45,265 as compared with Rs. 41,795 in the previous year. The total earnings of the school amounted to Rs. 2,664. The average net cost per boy works at about Rs. 290 a year.

A little over two years ago the Government of Bombay announced as their policy that schools maintained or aided out of public funds which refused to admit children of Depressed Classes would be deprived of assistance from public funds. Educational officers were called upon to see that no disability was imposed on these children in any school conducted by a public authority in its own or in a hired building. Where buildings have been hired subject to the condition of exclusion of the Depressed Classes, the local authorities were to be pressed to make other arrangements free from any such condition. Similarly, where public schools were held in temples or sacred buildings, efforts were to be made to secure accommodation without delay. The second annual report submitted by the Director of Public Instruction in accordance with these orders shows that no complaints regarding admission to children of the Depressed Classes to schools have been reported in the Thana and Kolaba Districts. There was one instance of a school at Mohadi in Nasik District (which is held in a temple) where a Depressed Class boy was not allowed by the villagers to sit along with other pupils but who was admitted to a neighbouring District Local Board School. At Vinchur, in the same District, some trouble had arisen, but it was overcome by removing the school to another building. In the Ratnagiri District there were 74 schools, held in temples or private houses, to which admission was refused to these children by the villagers or owners, owing to caste prejudices. Instructions, however, have now been issued to

remove the hardship at once by providing other suitable accommodation for these schools. As regards the Central Division, admission to schools does not appear to have been refused to Depressed Class children in any district except East Khandesh. In the District Local Board Schools at Pimpri and Talvada serious difficulties were experienced. At Pimpri the school meets in a temple and at Talvada it meets in a private rent-free house and the villagers strongly objected to Depressed Class children being seated in the schools along with other boys. Arrangements are being made to find suitable accommodation for these schools elsewhere. In the case of the Northern Division no difficulty is reported to have been experienced in the Kaira and Panch Mahals Districts in admitting the Depressed Class children to schools. In the Broach and Surat Districts the opposition is reported to be dying out. The same cannot be said of Ahmedabad where the opposition on the part of the caste people prevails as before. In some cases parents of Depressed Class children prefer their children to be seated at a distance from other pupils through fear of trouble from the higher castes, while in others they succumb to the pressure of the higher castes and prefer seating their children in verandahs or sheds. In the case of schools which are held in temples, *dharamsalas* or rented houses, opposition is shown by the owners and managers. There were in all 20 such schools in the Ahmedabad District, one in Broach and three in Surat. In the Southern Division and Sind no case is reported in which admission was refused to the children of Depressed Classes.

Protection to Textile Industry.

The *Forward* writes :—To protect their own textile industry Australia has placed a duty of one shilling per square yard, plus 30 per cent *advalorem* on British cotton piece-goods. Hitherto they have entered Australia free of duty. It means the selling price of British cotton goods will be raised 100 per cent. There is also a heavy tariff on woollens. Therefore, both Lancashire and Yorkshire are gravely concerned. The power of Lancashire interests is well-known and we wonder how it will affect India. Cut off from a big market will they turn their eyes to India and try to cripple our mills ? The repercussion is likely to be felt in India. Another question rises to the mind : Will Australians now become one of the inferior races whose best interests are in the trusteeship of imperialists? After Wembley, that great gathering of the industries of the British Empire, this must be somewhat disappointing, because that Exhibition was meant to increase reciprocity in the Empire. It seems to have taught quite a different lesson.

Prof. Benoy Sarkar.

A correspondent writes :—Srijut Benoy Kumar Sarkar, the well-known educationist of Bengal, has recently arrived with Mrs. Sarkar at Benares after his long and eventful sojourn in Europe and America. His rare genius, unflagging zeal and other stern qualities of head and heart have acquired for him an international reputation. Born and brought up in Malda, Srijut Benoy Kumar, after finishing his distinguished academic career, joined the National Council of Education, Bengal, and made his birth place for many years the "Karmakshetra" of his public life. Now that he is back from Europe, imbued with the modern ideas of the West, India expects much more from him. It is understood his future activities will be mainly directed towards the promotion of banking on a small scale, district by district. He will also take a keen interest in the problem of economic legislation for India.

Prices of Foodgrains in India.

The average level of wholesale prices of cereals and pulses in India on or about the 31st August, 1925, showed no fluctuation as compared with a fortnight ago. Prices of rice and maize increased by 1 per cent and *arhar dal* by 2 per cent, while those of wheat, barley, *jowar*, *bajra* and *gram* remained stationary. There was a rise of 1 per cent each in the prices of *ghi* and raw sugar (*gur*), but salt remained unchanged. As regards provincial prices, the noticeable changes were as follows :—(1) An increase of 17 per cent each in maize in the Punjab and in *arhar dal* in Delhi ; (2) an advance of 10 per cent in rice in Assam and (3) a fall of 11 per cent in maize in Bihar and Orissa. The price of rice in Bengal rose by 1 per cent, while there was a corresponding fall of 1 per cent in wheat in the Punjab.

India's Foreign Sea-Borne Trade in August.

Total imports of private merchandise in August, 1925, amounted to Rs. 18,80 lakhs, and total exports, including re-exports, to Rs. 29,24 lakhs. Net imports of private treasure during the month were Rs. 3,38 lakhs, and the total visible balance of trade in merchandise and treasure was Rs. 7,13 lakhs in favour of India. Balance of remittances of funds was *minus* Rs. 5,29 lakhs.

A Railway Rates Tribunal for India.

David S Erulkar writes to the "*Capital*":—"It will be remembered that in recommending the establishment of a Rates Tribunal the Acworth Committee, the members of which were themselves unanimous in this recommendation of theirs, stated that the suggestion about the establishment of such an authority to control Rates met with the unanimous approval of both the Representatives of the Indian Public as also of the Indian Railways.

This necessity for the establishment of a Rates Tribunal was reiterated from time to time by Government officials in their assurances to the Indian Public. Sir Charles Innes whilst speaking in this connection once remarked that matters relating to undue preference and unreasonable rates would be dealt with by the proposed Rates Tribunal.

Although some years have elapsed since the issue of the Acworth Committee's report, beyond the pious assurances on the part of the Government, we do not seem to be any the nearer as regards the actual establishment of the Rates Tribunal, and if Dame Rumour is to be believed, the influence of the Lessee Companies is working might and main with a view to creating difficulties in the way of the Indian public having the benefit of a properly authorized Rates Tribunal to control rates.

It may be pointed out that even when the present Indian Railway Act (of 1890) was under consideration, a Railway Commission on the lines of the Railway Commission existing in England was promised to this country. But such a permanent Commission was never sanctioned. This was due, as was plainly admitted by the Hon. Member of the Viceroy's Executive Council, to the influence of the Railway Companies. It appears the same fate now awaits the Rates Tribunal as recommended by the Acworth Committee. Even prior to this Committee, the late Sir Thomas Robertson, Special Railway Commissioner for India, had emphasized in strong terms the necessity for a Rates Tribunal or Railway Commission for this country, particularly on the ground that "Under the provisions of the present Indian Act the calling into existence of the Railway Commission to hear complaints against Railways is considered so costly an undertaking that the Commission has never once been created." Further that in each case the prior sanction of the Governor-General in Council had to be obtained for the creation of the Commission and the Government of India could at their discretion withhold their sanction. It is significant that this highly expensive and cumbersome mode of granting relief has so far not been availed of, and not a single instance of a Commission having been applied for and created under the provisions of this Act exists in the history of the Indian Railways. It cannot be contended either that the Indian public have had no reason to be dissatisfied with the rates imposed upon them by the Indian Railways. The block rates of Broach although resented in the strongest of terms as being grossly unfair, arbitrary, detrimental to Indian interests, and even illegal, did not result in any demand for a Commission under Chapter V of the Indian Railways Act of 1890, because of the cumbersome nature of the procedure and the prohibitive cost entailed in moving for the appointment of a Special Commission for the purpose.

In this connection it may be observed that the main object underlying the provisions in the English Act dealing with the establishment of the Rates Tribunal was to provide both expeditious and cheap redress to the public. But in India the nature of the machinery under the provisions of the Act for granting redress to the aggrieved public is so cumbersome and obstructive as to shut out successfully all applications for relief.

Although the Block Rates of Broach have been abolished instances can yet be cited where the Railway Rates will be found to be such as to warrant a careful inquiry in the best interests of the Indian public. Even within the maxima and minima limits prescribed by the Government of India, there is sufficient scope for preferential or unreasonable rates being charged. This will be substantiated by a careful comparison of rates existing at the non-competitive and at the competitive stations. The latter would mainly include ports where there is competition by sea or canals. But apart from such variations within the maxima and minima limits the Government of India have actually gone out of their way by empowering the Railways on the East Coast of India to infringe the minima class rates, it being permissible under the sanction granted by the Government of India, for the Railways concerned to quote lower class rates, although the commodities are classed in the higher classifications with higher statutory minima. In other words, it is quite competent for the Railways under this sanction to quote

1/10 pie per maund per mile the prescribed minimum for first and second class goods, even for 3rd to 9th class goods for which the ordinary minimum is higher, *viz.*, .166 per maund per mile. The avowed object is to meet competition by sea and canal routes. It is stated as a temporary measure, presumably to remain in force until such sea and canal competition is wiped out. A great deal can be said to criticize this policy on the part of the Government of India as being opposed to the best interests of the Indian public. It may be mentioned here in addition, that the growth of the minor coastal ports which could with proper nursing contribute largely to bring down the rates of transport for the Indian consuming public, is stunted owing to the Railway policy of feeding the principal ports only. I am dealing separately in detail with the Railway policy with regard to shipping from various aspects. At this stage I wish to emphasize the grave necessity of a properly authorized Rates Tribunal which could be competent to decide such important questions affecting the Indian Commercial and Industrial interests. Even in England the advantages of cheap water transport and the need for its protection from competitive Railway Rates were fully recognized. Under the English Railway Act of 1921 in the Chapter dealing with the Rates Tribunal Sec. 39 provides that :

"If and whenever representations are made to the Minister by any body of persons who in the opinion of the Board of Trade are properly representative of the interests of shipping or canals, that exceptional rates are being charged which are competitive with coastwise shipping or canals in such a manner as to be deterimental to the public interests, and which are inadequate having regard to the cost of affording the service or services in respect of which the rates are charged, the Minister shall (if satisfied that a *prima facie* case has been made out) refer the matter to the Rates Tribunal for review and the Rates Tribunal may, after hearing all parties whose interests are affected, vary or cancel such rates or make such other order as may seem to them expedient."

It is all the more significant in the case of England, where shipping was fattened for centuries on the monopolistic boons conferred upon it by the Navigation Laws, that it should be considered essential even there to protect the coastal shipping from the onslaughts of cutthroat Railway Rates.

The Government of India are even now slow to recognize the advantages of the development of coastal shipping as will appear from the delay in their accepting the lukewarm recommendations of the Mercantile Marine Committee. In the meantime they are helping the Railways to throttle the coastal shipping.

While so very neglectful of Indian Shipping, the Government would appear to be overmindful of vested interests of British Companies in Indian Railways, if a Rates Tribunal with Judicial powers to afford redress from the unreasonable and preferential rates charged by the Railways is denied to the Indian public. The Government of India have not only done nothing to bestow upon the Indian public the advantages of cheap water transport, but are actually helping the Railways by special sanctions to eliminate whatever little of it does exist because it may compete with the Railways. Added to this if the Government decline the Rates Tribunal to control rates they will be courting the charge of having actively helped the Railway Companies to be installed as monopolists in this country without any competition to fear or without any higher judicial body to answer, in exacting any rates from the Indian public.

By a resolution, dated 12th December, 1887, the Government of India promised to the Indian Public that the same rights will be secured to them as were enjoyed by the public in England under the English Railways Act. It is for the Government now to prove their sincerity underlying this resolution by resisting the Railway Companies' influence in doing justice to the interests of the Indian public who in fact are the owners of the Indian Railways and whose interests should be paramount.

Mysore Sandalwood Oil.

At the British Pharmaceutical Conference last month Mr. Horace Finnemore, B.Sc. (Lond.), in a paper read before it, pointed out the botanical, chemical and physical factors which, in his opinion, necessitated that for the present West Australian sandalwood oil should be kept distinct from East Indian. Dr. Percy May, D.Sc. (Lond.), however, in the discussion, urged that there is no evidence of any real chemical difference between the alcohols of good quality Australian oil and those of Indian oil, and that it is greatly to be desired that an impartial pharmacological and clinical examination of the Australian oil should be made in this country. This is a matter of some importance to the Mysore State as the Indian oil is mostly oil from Mysore and we would be glad to see that Mysore keeps an eye on this proposed investigation.

A Prosperous Life Company.

Progress of the "Oriental".

The Report of the Consulting Actuary, Mr. H. W. Brown, F.F.A., F.I.A., on the Seventeenth Triennial Valuation of the Assets and Liabilities of the Company, made in accordance with the provisions of the Articles of Association of the Company as at 31st December 1924, bears eloquent testimony to the prosperity that has attended the "Oriental" all long its career of usefulness in this country.

This Company, which was established in 1874 and is the oldest Indian proprietary Office transacting ordinary Life Assurance business, attained its Jubilee during the Triennium under review.

New Business.

During the three years the business exhibited a continuation of the marked expansion which signalized the preceding Triennium. The following Table illustrates the progress achieved as compared with the position during previous Valuation periods :—

For the Triennium	No. of Policies issued	Sums Assured	Premiums thereon
		Rs.	Rs.
1922–24	25,441	5,76,76,400	33,73,582
1919–21	24,762	5,08,08,825	28,22,790
1916–18	13,963	2,77,30,775	15,05,864

The New Business for the year 1924 was the largest ever transacted by the Company. A satisfactory feature of the New Business of the Company is the continued increase not only in the average sum assured but also in the average premium per thousand rupees assured. This is shown in the following Table :—

For the Triennium	Average Sum Assured	Average Premium per Rs. 1,000 Assured.
	Rs.	Rs.
1922–24	2,267	58.8
1919–21	2,052	55.9
1916–18	1,986	54.5

Income.

The following Table gives a comparative statement of the Net Income from Premiums (including Considerations for Annuities granted) after deducting Re-assurance Premiums, and also from Interest (less Income-Tax and Super Tax) :—

Year	Premiums	Interest (Less Tax)	Total
	Rs.	Rs.	Rs.
1922	74,52,437	28,39,779	1,02,92,216
1923	78,45,636	33,02,196	1,11,47,832
1924	83,68,532	31,79,064	1,15,47,596
1922–24	2,36,66,605	93,21,039	3,29,87,644
1919–21	1,97,66,443	75,93,976	2,73,60,419
Increase	39,00,162	17,27,063	56,27,225

The interest credited to the year 1923 included a refund of Income-Tax in respect of the Triennium 1919-1921 amounting to Rs. 3,26,499. If this item be ignored the Premiums and Interests show a steady upward movement.

Expenses.

The Ratios of the Expenses of Management to the Premiums and Annuity Considerations are as follows :—

Year	Ratio of Expenses
1922	21.0%
1923	20.4%
1924	21.6%
1922–1924	21.0%
1919–1921	21.5%

Including the Expenditure on the Jubilee Year Celebration, the Expense Ratio for the year 1924 is 22.7%, but when this special non-recurrent item is omitted the percentage is 21.6 as above. The increase in the latter figure as compared with the two preceding years is due to the more liberal Commission Terms which came into force as from the beginning of 1924 and to the heavy initial cost of the rapidly expanding New Business. There is ground for anticipating that with the increase in the Renewal Premium Income there should now be a downward movement in the Expense Ratio.

Claims.

The following Table shows the Claims of the Triennium under review as compared with those of the preceding Triennium :—

Year	Claims by Death	Claims by Muturity	Total
	Rs.	Rs.	Rs.
1924	29,11,024	25,30,819	54,41,843
1923	28,29,007	20,90,969	49,19,976
1922	22,51,489	22,09,741	44,61,230
1922–1924	79,91,520	68,31,529	1,48,23,049
1921	27,74,288	18,71,259	46,45,547
1920	26,75,475	16,64,684	43,40,159
1919	28,01,895	14,89,049	42,90,944
1919–1921	82,51,658	50,24,992	1,32,76,650

It is gratifying to find that the tendency of the Claims to increase is much more pronounced in the case of Endowments Matured than in the case of Claims by Death. The increase in the former reflects the fact that Endowment Assurances have been steadily displacing the other Classes as the favourite medium of Life Assurance. The Claims by Death will naturally increase with the growth of the business of the Company. The Claims by Death in 1922 were exceptionally light, and it is satisfactory to observe that during the last six years any marked fluctuations have been in the direction of a more favourable Mortality. The Mortality Experience from the standpoint of the percentage of actual Claims to those expected and provided for by the Table of Mortality used in the Valuation has been extremely favourable. The percentage which the total of the Claims by Death for the Triennium bears to the total Claims expected by the Table of Mortality is only 74.2 which is the lowest experienced in the history of the Company and compares with 85.4 for the preceding Triennium.

Although this percentage is only a very rough guide as to whether the Mortality Profit has been satisfactory without a detailed analysis of the Claims, the results of the Valuation show that there has been a substantial Profit from Mortality.

Interest.

The average rates of interest (less Income-Tax and Super Tax) earned on the Funds of the Company, after allowing for the Investment Reserve Fund, are :—

Triennium	Average rate of Interest on Funds	Increase
	Rs.	Rs.
1916–1918	4.782%	..
1919–1921	5.310%	.528%
1922–1924	5.731%	.421%

Reference is made below to the transfer of Rs. 18 Lakhs from the Investment Reserve Fund to the Life Assurance Fund as at 31st December 1924, and this increase in the Assurance Funds without any corresponding increase in the interest earned will affect the future interest rate. As a guide to the rate of interest likely to be earned in the immediate future, it may be stated that when the calculations are made as if this transfer had taken place at the beginning of 1924, the net interest earned in 1924 produces a yield of 5.35%.

Investments.

The Funds of the Company are represented by first class securities. In accordance with the rules of the Company the larger portion of the Funds is invested in Government Paper, the premier security in India, and the remaining portion is laid out in carefully selected securities of the highest standing. The Investment Reserve as at 31st December 1924 amounted to Rs. 38,56,934. A Valuation of the Company's Investments at the Market Values prevailing at that date disclosed the fact that only Rs. 5,51,502 of this Reserve was necessary to cover the difference between the prices at which the Investments stand in the Books of the Company and their Market Values, and the Directors decided to transfer Rs. 18,06,934 from the Investment Reserve Fund to the Life Assurance Fund, to be wholly applied in strengthening the Valuation Basis. There is left an Investment Reserve of Rs. 20,50,000 of which Rs. 14,98,498 is an Actual Free Reserve for possible future depreciation.

Funds.

The following is a statement of the combined Life Assurance Fund and Contingency Reserve Fund at the end of the last three Valuation Periods, showing also the amount by which these Funds have increased :—

At close of Triennium	Life Assurance and Contingency Reserve Funds.	Increase
	Rs.	Rs.
1916–1918	4,57,96,375	..
1919–1921	4,93,54,285	35,57,910
1922–1924	6,26,50,995	1,32,96,710

The increase in the Triennium 1922–1924 includes the amount of Rs. 18 Lakhs transferred from the Investment Reserve Fund, but even if this transfer be excluded, the addition is the largest on record.

Valuation as at 31st December 1924.

At the Valuation which was made as at 31st December 1912, the rate of interest assumed to be earned on the funds of the Company was 3%. The outbreak and prolongation of the Great War with the consequent destruction of Capital on an unprecedentedly colossal scale resulted in the rate of Interest prevailing in the Money Markets being considerably increased, and with the increase in the rate of interest the market prices of Stock Exchange Securities bearing fixed rates of interest showed a corresponding depreciation. To meet this financial crisis, the Company felt they were justified in increasing the rate of interest assumed in the Valuation as at 31st December 1915 to 3¾%, and at the two subsequent Valuations made as at 31st December 1918 and 31st December 1921 the Valuation rates of interest were further advanced to 4% and 4¼% respectively. Since the date of the last Valuation the rates of interest have fallen somewhat, and this fall, combined with the gradual return to more normal financial conditions, has resulted in a considerable recovery in the values of Stock Exchange Securities. While the periodical increases of the rates of interest assumed in the Valuations were perfectly justifiable in view of the conditions then prevailing, it is nevertheless desirable to get back gradually to the rate of interest assumed in the pre-war Valuations. While it was justifiable to increase the Valuation rate of interest in view of the depreciation caused by the higher rates of interest prevailing during the War period, it is equally desirable that any appreciation consequent upon the fall of the rates of interest should be applied in strengthening the Valuation Basis by reducing the rate of interest assumed to be earned. It would in fact be unsound finance to do anything else. This principle actuated the Directors when they laid it down as a condition of the transfer of Rs. 18 Lakhs odd from the Investment Reserve Fund to the Life Assurance Fund, that the whole amount should be applied in strengthening the Valuation Basis. Accordingly the Valuation has been made on this occasion, at 3¾% interest, and this alteration in the interest basis together with a tightening up of the Valuation at one or two points, has exhausted the amount so transferred.

It is important that a sufficient margin between the rate of interest earned on the Funds and the rate of interest assumed in the Valuation should be retained, in order to maintain the rate of Bonus declared. The rate of interest estimated as likely to be earned in the immediate future is more than 1½% in excess of 3¾% and this is a very satisfactory margin.

Results of Valuation.

	Rs.
The Life Assurance Funds as at 31st December 1924 amounted, as shown in the Balance Sheet, to	6,23,06,668
Deduct amount required to provide Shareholders' dividend for 1924 payable in 1925	45,000
	6,22,61,668
Net Liability under the Assurance and Annuity Contracts	5,72,66,646
Leaving	49,95,022
Add amount of Interim Bonus paid on Policies which emerged during the Triennium	1,09,575
The Profit for the Triennium	51,04,597
Amount to be transferred to Contingencies Reserve Fund in terms of Section 130 of the Company's Articles of Association	17,01,532
Net Profit available for division ..	34,03,065

	Rs.	
Of which the Shareholders' portion is one-tenth ..	3,40,307	
And Policy-holders' portion, nine-tenths	30,62,758	
		34,03,065
If the Shareholders' portion of .. be augmented by transferring to it from the Contingencies Reserve Fund		3,40,307
		1,69,693
the amount .. .. will provide :—		5,10,000
(1) The cost of capitalizing Profits to the extent of Rs. 50 per Share, thus increasing the amount paid up under each Rs. 200 Share from Rs. 50 to Rs. 100	1,50,000	
(2) A Bonus Dividend at the rate of Rs. 30 per Share, payable immediately on Declaration	90,000	
(3) Dividends to Shareholders for the next three years, namely, 1925, 1926 and 1927, at the rate of 30% per annum on the Paid-up Capital of the Company (as increased to Rs. 100 per Share) ..	2,70,000	5,10,000
If from the Policyholders' portion of .. there be deducted the amount already paid as Interim Bonus		30,62,758
		1,09,575
		29,53,183
And a transfer made to it from the Contingencies Reserve Fund of		15,32,082
the amount .. .. will provide Bonuses to Policy-holders for the Triennium ended 31st December 1924 at the rates of :—		44,85,265
(1) Rs. 22½ per thousand per annum on Whole Life Policies, and		
(2) Rs. 18 per thousand per annum under Endowment Assurance Policies ..		44,85,265

The Consulting Actuary recommends that these rates of Bonus be declared on Participating Policies subsisting at 31st December 1924.

The Consulting Actuary recommends further that Intermediate Bonuses be allowed as follows :—

(1) (*a*) Intermediate Bonus at the rate of Rs. 20 per thousand on the original sum assured for each year's premium due and paid subsequent to 31st December 1924, under Whole Life Participating Policies with premiums payable during the whole currency thereof effected prior to 1st January 1925 becoming claims by death during the current Triennium.

(*b*) Intermediate Bonus at the same rate and upon the same conditions under Whole Life Participating Policies by limited number of premiums ; after the premiums have ceased the Intermediate Bonus to be allotted for each Policy Anniversary passed subsequent to 31st December 1924 or subsequent to the due date of the last premium if later than 31st December 1924, provided the policy becomes a claim by death during the current Triennium while in force for the full sum assured.

(2) Intermediate Bonus at 80% of the above rates under Endowment Assurance Participating Policies effected prior to 1st January 1925 becoming claims by death or by maturity during the current Triennium.

If these recommendations be adopted there will be left in the Contingencies Reserve Fund a balance of Rs. 3,44,084 to be carried forward as a provision for future contingencies.

General Remarks.

An independent Valuation of the Assets and Liabilities has been made by the Company's Actuary on the principles (approved by the Consulting Actuary) contained in the statement furnished under the Fourth Schedule to the Indian Life Assurance Companies Act, 1912. The Valuation has been made with care and precision. The Consulting Actuary believes the calculations to be accurate and the results of this Valuation agree with those given above. The profit which it is recommended should be distributed has been provided out of earnings from normal sources, principally Interest in excess of that required in the Valuation, Loading on the premiums in excess of Expenses incurred, and favourable Mortality. No profit from Investments, whether realized or accrued, has been included in the Surplus to be distributed. The Bonuses although materially higher than the Company has declared in the past, can be allotted without straining its resources in any way, and, with no recurrence of abnormal political or financial conditions, the Policy-holders can look forward with confidence to the maintenance of the Bonus rates. The stability and prosperity of the Company must be regarded as a triumph of successful management, fully deserving the confidence bestowed upon it by its Policy-holders and Shareholders.

At an Extraordinary General Meeting of the Company held on the 11th day of August 1925 at the Office of the Company, Oriental Buildings, Bombay, suitable resolutions approving the Actuary's Report and the declaration of profits and bonuses were carried.

Gadag Co-operative Cotton Sale Society, Ltd.—We note from the Annual Report of the Society for 1924-25 that there were enrolled 1,397 members holding 37,914 shares against 1,174 members holding 19,467 shares in the year 1923-24. Of the 1,397 members, we note 72 were societies and 1,325 individuals. The Society realized a dividend of 9⅜% during the year. The reserve stood at Rs. 27,120 at the end of the year. During the period, 4 auction sales were conducted, the total number of *docras* sold in the above auctions being 6,143 *docras*. The prices realized in the auction sales were higher by Rs. 10 to 20 per rug than the local and Bombay market rates. During the period under report, the Society purchased 12,060 bags of different kinds of cotton seed recommended by the Department of Agriculture at wholesale rate and sold to its members at reasonable prices. The progress of the Society is entirely due to the efficient management of Mr. S. M. Wadiarmath, its Managing Director, whom we would congratulate on the good work he is doing.

Whoever wants in future to become an honorary Fascist will have to be a greater poet than Dante or discover a sixth continent, or find means to cancel our debts to the Anglo-Saxons.—*Signor Mussolini.*

Books in Brief.

Short Reviews of Recent Books.

The Labour Movement in India.

By Rajani Kanta Das, M.Sc., Ph.D., former Lecturer in Economics, New York University. Published in Berlin.

This small brochure of 112 pages contains a brief and interesting account of the recent 'labour movement' in organized industries in India. The first 44 pages deal with its origin and development and are mainly descriptive ; the remainder of the book, dealing with its nature and significance, analyses the philosophical background of the movement and is mainly didactic.

The writer distinguishes three distinct periods in the development of Indian Labour :—(1) The Regulation Period (1875-91), (2) The Abolition Period (1891-1917), (3) The Organization Period (1918-22). The distinctive features of each period were (1) to regulate child and women labour, (2) the abolition of the indentured system, and (3) the unionization of the labouring classes.

The most significant development in the world of Indian labour, especially during the War and after, is the formation of Trade Unions. But of over 3 million workers in organized industries, only about 5,00,000 have been unionized in about 113 Unions scattered over different parts of the country. It is true that in the majority of cases the principles of unionism sit lightly on the members and their resources are still poor but being the product of Capitalism it has come to stay in India.

With respect to the opinions expressed by the writer he seems to belong to the Marxian School of Socialists with a distinct bias towards Bolshevism. He is of opinion that the growth of capitalism is inevitable in India and even welcomes it. The writer seems to deplore the absence of radicalism in the programme of labour at present and after noting its causes concludes as follows :—"But the philosophy of these movements (socialism, syndicalism, etc.) has already imbued the thoughts of several labour leaders. The most important factor of the rise of radical doctrine in India is the Soviet Government of Russia which is only a neighbouring State.....Sooner or later such movements will find their place in India" (pp. 54, 55).

It is obvious the writer welcomes capitalism in India only to be overthrown later by the mass movement of labour perhaps on the most approved Bolshevik lines. I must confess I am sceptical about the virtues of these extreme remedies for bringing about social peace, harmony and progress. Distrust begets distrust, aggressive class consciousness leads to class war in which the worst passions are let loose. In individual as well as in national life, "as you sow, so shall you reap".

In our hurry to industrialize our country, we ought not to give up our old ideal of plain living and high thinking. I have also a great distrust of the shopkeeper's moral maxim which passes current in Economic text-books, *viz.*, "the progress of civilization is due to the multiplication of material wants". The strength of Capitalism lies in the multiplicity of wants, and if the labourers are wise, they would do well, as taught in the fable, not to create the monster and then try to kill it.

Again, writing on the significance of labour movement our author says : "Like the Greek and Roman societies, the society in India represented the life of only a few upper classes. The masses of the people remained inert and vegetative. Neither political revolutions nor religious reforms found any means for the reclamation and acclimatization of the intellectual and spiritual wealth of the teeming multitude. The labour movement has, for the first time in India's history, given them a means for the assertion of their rights and for the development of their individuality" (p. 100).

To say that neither political revolutions nor religious reforms in India have awakened the intellectual and spiritual wealth of the teeming multitude is, to my mind, unhistorical. It is well known that the masses in India are extremely sensitive to religious and ethical influences and these have, on the whole, stood so far in the way of their developing the spirit of self-assertion, aggressiveness and selfish aggrandisement, which form so marked a feature of western civilization to-day. I very much doubt whether we are losers on account of the absence of this spirit of strife and assertion of selfish individuality.

In spite of his extreme views, the writer's opinions and philosophy of life are very thought-provoking. They deserve the earnest attention of all social workers in this country.

[S.S.A.]

The Size and Distribution of Agricultural Holdings in the Punjab.

By S. Calvert, Registrar, Co-operative Societies, Punjab, pp. 18.

An Enquiry into Mortgages of Agricultural Land in the Kot Kapura Utar Circle, Punjab.

By Sardar Balwant Singh, B.A. Edited by H. Calvert, VIII, pp. 30.

These pamphlets are Nos. 4 and 5 in the Rural Section Publication of the Board of Economic Inquiry, Punjab. This Board is to be congratulated on the excellent monographs it publishes from time to time on the different aspects of economic life in the Punjab. Its other publications are :—The Economic Survey of Bairampur ; The Milk Supply of Lahore ; Questionnaire for Economic Surveys ; Rates of Food Consumption of Zamindars ; Sixty Years of Food Prices ; The Economic Value of Goats ; An Economic Survey in the Kangra District. These are obtainable from "*C. & M. Gazette*", Lahore.

As regards the size and distribution of holdings the main conclusions of our author are :—(1) The majority of the Punjab peasants own very small parcels of land, but the greater portion of the cultivated land is held in holdings of over 15 acres. Thus 49.7% own less than five acres, 31% over five but under fifteen, 14.4% over fifteen but under fifty acres and less than 6% over fifty acres ; (2) The size of the holding is influenced by rainfall and in recent years by the facility for canal irrigation ; the greater the facilities the less as a rule the area of the owner ; (3) Since the majority of owners are uneconomic holders, there is some waste of capital

resources especially bullock power; (4) Among the causes leading to the distribution and size of holdings the writer gives the place of importance to rainfall and canalization; "the price of sheep, or wheat, the import of foodstuffs, the increase of profit from large or small holdings has had no important influence.... The effect of increase of population in diminishing the size of holdings must be very slow but it is, of course, not negligible...."

As regards the question of land mortgage some interesting details are revealed in this survey: (1) The area under mortgage has gone on increasing. Between 1872 and 1890, the area under mortgage was 3% of the total. In the latter year it was 8%. Between 1890 and 1913, 5% of the area was sold to other owners, and 1% to money-lenders, while 11% was under mortgage. The total mortgage money has also increased from about Rs. 3 per acre in 1872 to Rs. 20 in 1890 and Rs. 180 at the present time. (2) Another fact is that the major portion of the money loaned out has been derived from agriculturists out of savings from agriculture, and this, Mr. Calvert remarks, is one of the signs of increasing prosperity. (In his inquiry into conditions in the Malabar Coast, the present reviewer came across the same tendency there.) (3) As regards the details of expenditure 64½% was paid on account of previous debt, secured and unsecured; 13% spent in wine, opium, gambling, etc., 6% in marriage; 2% in purchase of capital; 2% for food; 2.5% for redemption of mortgaged land other than the mortgager's; 4% for purchase of land, and taking land in mortgage; 1.5% for litigation; 0.5% for revenue and rent.

There are numerous details in the pamphlets which throw a flood of light on rural economic conditions. It also contains two questionnaires issued by the Punjab Board of Economic Inquiry on the subject of mortgages. We hope that the Punjab example will be followed by the other Provinces. [S.S.A.]

General Problems of Social Insurance.

1 Vol. Pages 160. Price *sh.* 2/6 or 60 cents.

This volume is one of the technical reports which was prepared for the Seventh Session of the International Labour Conference, held at Geneva in 1925. It is divided into six parts, prefaced by an introduction on the historical development of social insurance and a table of the principal laws respecting workmen's compensation, compulsory social insurance and social assistance. The main problems of social insurance such as its scope, benefits, financial resources, financial systems, and institutions are dealt with consecutively. The sixth part discusses the important question of the unification or co-ordination of social insurance.

Industrial Safety Survey.

International Labour Office (Sales Branch).

This new periodical (two-monthly, 30 pp. large quarto. Annual Subscription 6*sh.*) is intended to act as a link between those in all countries who are interested in problems of accident prevention. Considerable progress is being made both towards perfecting mechanical safety devices and towards the introduction and general adoption of safe methods of work. Too often, however, the results achieved are known within a limited circle only, so that international co-operation is almost an impossibility. This defect the new *Industrial Safety Survey* sets out to remedy. It contains articles on various aspects of accident prevention, technical developments, special types of accident, and statistics. It also follows the day-to-day work of organizations for the promotion of industrial safety in a dozen or more countries and summarizes new legislative measures, safety codes, etc. The bibliographical section gives reviews of current periodical and other literature in many languages. The columns of the Survey are open to discussion and exchange of experience and ideas on any subject coming within the province of accident prevention. The first number includes an article on Safety Education in Industry, copiously illustrated with reproductions of safety posters; an account of work done by safety organizations in Canada, France, Great Britain, and the United States; notes on boiler inspection, high-pressure acetylene apparatus, and the storage of compressed gases; and summaries of 23 articles and five books on industrial safety.

Mysore Economic Conference.

Board of Industries and Commerce.

The following is a summary of the Proceedings of the Fifth Meeting of the Board of Industries and Commerce held on Saturday, the 25th July 1925, at 1 P.M., in the Chambers of the First Member of Council, with K. R. Srinivasa Iyengar, Esq., M.A., Offg. First Member of Council (*Chairman*), in the Chair.

PROPOSALS FOR THE EXPLOITATION OF GHAT FORESTS.

The Chairman observed that the consideration of the draft proposals already circulated amongst the members was deferred at the last meeting to enable Mr. Usman Khan to ascertain if better offers could be secured for the exploitation of these Ghat Forests and enquired of Mr. Usman Khan what the results of his efforts were.

Mr. Usman Khan said that he discussed the proposals with two or three leading merchants but it was suggested by them that it would be better to call for tenders. He, however, thought that the proposal now before the Board appeared to be very favourable and likely to result in good revenue to the State and therefore he had no objection to its being adopted.

The Conservator of Forests said that there was a proposal before Government to start a Saw Mill at Megarvalli together with a plant for the creosote treatment of sleepers and that the question of the development of these Ghat Forests by private agency may perhaps be deferred till orders of Government were passed on these proposals. A suggestion was made that the Saw Mill at Bhadravati may be utilized for this purpose but doubts were expressed as to its suitability. The Agent, Mysore Railways, gave his experience of the creosote plant as put up at Lahore.

After some further discussion it was resolved that the subject might be deferred pending the result of the Conservator's proposals under consideration of Government for the establishment of a Saw Mill at

Megarvalli and for the erection of a creosote plant in a suitable locality for preservation of Ghat timber for use as sleepers.

Introduction of Workmen's Compensation Act into Mysore.—The Chairman observed that the subject was deferred at the last meeting of the Board as the opinions of some of the large industrial concerns were not received then. He read out the letters received from several concerns, *viz.*, Sri Krishnarajendra Mills, Bangalore Woollen, Cotton and Silk Mills, Kaiser-i-Hind Woollen, Cotton and Silk Mills, Mysore Spinning and Manufacturing Company, the Mysore Railways and Kolar Gold Mining Company who were large employers of labour in the State. He observed that most of the concerns were in favour of the introduction of the Act with suitable provisions to suit local conditions. As regards the reply received from the Kolar Gold Fields Mining Board that they had already in operation a scheme by which their men were compensated for injuries and that they who were even more liberal in certain respects than the provision of the Workmen's Compensation Act, the Chairman observed that the question of making provision in the Act for exempting from its operation companies like the Kolar Gold Fields which had a separate scheme of their own may be considered in drafting the Bill, provided the obligations of the companies according to the scheme can be legally enforced by their employees.

Sir K. P. Puttanna Chetty wanted to know if it would be wise to introduce the Act into the State considering the nascent stage of the industries of the State.

The Director of Industries and Commerce and Mr. P. Murugesam Pillai pointed out one or two points in the British Indian Act which required modifications so that they may suit local conditions.

The general sense of the meeting was that the Act may be introduced into the State.

The Chairman suggested that a Select Committee of this Board may be formed to draft a Bill which could be discussed by the Board and then submitted to Government.

"It was resolved that a Regulation on the lines of Workmen's Compensation Act may be introduced into Mysore with such modifications as may be necessary to suit local conditions with provision for exempting from the operation of the Regulation concerns which have made due provision, as approved by Government, for protection of the Workmen and that a Committee consisting of the following members with power to co-opt not more than three outsiders be appointed to prepare a draft Bill to be placed before the Board at its next meeting."

1. The Director of Industries and Commerce (Convener).
2. The Chief Electrical Engineer.
3. Mr. V. Manickyavelu Mudaliar.
4. ,, P. Murugesam Pillai.
5. ,, B. K. Garudachar.

Revision of the Rules for the grant of Takkavi Loans.—The Chairman read out the rules now in force and observed that they were framed in the year 1913 and required certain modifications to suit altered conditions. He explained that under the Rules the Director of Industries and Commerce was empowered to grant loans up to Rs. 2,500 and the Chairman of the Industries and Commerce Board up to Rs. 5,000 but in view of the financial stringency and the small allotments made in the budgets, every application was now required to be sent up to Government. He said that the rules of 1913 which were applicable to both Industrial and Agricultural loans were not sufficiently explicit and satisfactory as regards purpose for which the loan should be granted, the security to be offered for the loan, etc., and he suggested the desirability of framing a set of rules somewhat on the lines of the provisions of Madras State Aid Act to Industries, for regulating the grant of loans and other facilities for encouragement of industries in the State. In this connection he also expressed the desirability of compiling a complete and an up-to-date statement of industrial loans issued under the 1913 rules showing the amount of loan issued in each case, the amount recovered and the extent to which the applicant was benefited by the grant of the loan being compiled by the Director.

The Director of Industries and Commerce said that till now in all about nine lakhs of rupees had been issued as loans and that about five lakhs of rupees were already recovered.

Mr. V. Manickyavelu Mudaliar suggested that loans might be granted through Banks on the recommendation of the Director and that the Bank might institute the proper enquiry as to the security, etc.

The Chairman said that this would not be possible.

After some further discussion it was finally resolved that a Sub-Committee consisting of the following members be appointed to consider modifications of the Loan Rules of 1913 and submit their recommendations to the Board.

1. The Director of Industries and Commerce (Convener).
2. Mr. V. Manickyavelu Mudaliar.
3. ,, B. K. Garudachar.
4. ,, B. Usman Khan.
5. ,, V. Rangaswami Iyengar.

Introduction of a Regulation to regulate the Working of the Cotton Ginning and Pressing Factories in the State.—The Chairman observed that the Government of India desired that the Indian States should cooperate with them in the introduction of this Act. He read for the information of the members a letter received from the Residency in the matter and said that the Act which required every pressing factory of cotton to write down the name of the consigner on each bale with serial number so as to prevent any adulteration was a simple one and could be introduced into Mysore with advantage.

The Director of Industries and Commerce said that there were about ten Ginning Factories and six Pressing Factories in Davangere and almost all of them were undertaking voluntarily what the Act contemplated. He said that all that the Act provides for was already being done by the factories and that it was not therefore worth while or necessary to introduce the Act.

The Chairman observed that if as stated by the Director the provisions of the Act were being practically adopted in the State there could be no harm in the formal introduction of the Act and wanted to know from the Director if there was any specific objection to the introduction of the Act. After some further discussion the Board considered that as there was no specific objection to the Bill, it may be introduced.

Consideration of the Proceedings of the Sub-Committee Meeting relating to Mineral Industries held on 3rd July 1925.—The Chairman read out the proceedings of the last Sub-Committee meeting and said that the only points that required consideration were the facilities that were required by the mine owners for transport

of ores and the removal of the restriction on the export of Kaolin. As regards the former he said that there was no specific recommendation made by the Sub-Committee in the matter and that if the proposals made in the proceedings were to be treated as a general proposition a resolution was necessary, but if it related to an individual case the applicant himself may approach Government with his representations. He also expressed that in view of the Porcelain Industry being started some time in future it was not advisable to remove the restrictions placed on the export of Kaolin.

Mr. V. Manickyavelu Mudaliar said that the proposals in his letter *re.* the sale of rails, sleepers, etc., were general and any one might be given such concessions.

The Chairman observed that his proposals almost amounted to the grant of a loan for laying out railways by whomever it was done and that it does not come under the purview of the Board to take any action and each application might be considered on its merits.

The Agent, Mysore Railways, was of opinion that there would not be much rolling stock, etc., available for sale.

"It was resolved that regarding transport facilities for ore no general rules need be made, each case being decided on its merits."

A similar view was expressed as regards the export of raw minerals like Kaolin.

Consideration of the Proceedings of the two Sub-Committee Meetings relating to Internal Trade held on 29th May 1925 *and 13th July* 1925.—The Chairman said that he had gone through the proceedings in detail and found that the Sub-Committee had taken great pains to arrive at definite resolutions on all the points raised by Government in their Order No. I. C. 3900-14—Stcs. 25-24-1, dated 9th December 1924. It was resolved that the recommendations of the Sub-Committee be generally accepted with some slight modifications as indicated below :—

1. "The Board is of opinion that the figures relating to the Imports and Exports carried by rail as shown in para 1 of the Government Order No. I. C. 3900-14—Stcs. 25-24-1, dated 9th December 1924 are incomplete in so far as the value of gold bullions sent out of Kolar Gold Fields is not taken into account and that in the absence of statistics relating to the trade of the State carried by roads, it is difficult to find out whether the balance of trade of the State is in favour of or against the State."

2. "That in view of the heavy cost involved in collecting statistical information relating to the road-borne trade of the State passing through the frontier roads the Board is of opinion that the present time is not opportune to recommend to Government to arrange for the collection of statistics of trade carried by all the roads but that arrangements should be made for the collection of statistics relating to trade passing through five or six important main roads, for example the roads in all the Malnad Districts and one or two Stations in Maidan Districts at a cost not exceeding Rs. 10,000 a year."

3. "That the Director of Industries and Commerce be requested to arrange for the preparation and early publication of a comprehensive report reviewing the foreign trade of the State during the past ten years from 1913-14 to 1923-24."

4. "That as a preliminary to the Economic Survey of the State as a whole, arrangements should be made for the collection of statistics for a series of years regarding the prices, wages, rent, census of production, distribution, etc., that a separate statistical section for this purpose be organized in the Department of Industries and Commerce and that in this connection the recommendations that may be made by the India Economic Enquiry Committee may with advantage be given effect to with such modifications as may be required by local conditions."

5. "That sericulture, sheep-breeding, cattle-breeding and spinning and weaving of cotton and wool were suitable subsidiary occupations that may be taken up in rural parts and that further impetus should be given to the development of these occupations as well as that of Cottage and Home Industries."

6. "That this Board emphasizes the need of having a comprehensive and up-to-date Industrial Survey of the State and is of opinion that the work should be entrusted to a special staff working under the orders of the Director of Industries and Commerce."

7. "That the Government of Mysore should come to an agreement with the Bank of Mysore to provide additional facilities for the development of trade, industries and agriculture of the State and that as the Bank by reason of restrictions imposed on all banking business cannot offer assistance in all cases, the Government should undertake the formation of the Industrial Investment and Development Funds sanctioned under Government Order No. 12445-I. & C. 266-18-3, dated 28th June 1919. The doubt that had been recently raised regarding the expediency of the Bank giving loans to industries, specially Joint Stock Companies, on the security of block account and underwriting capital in case of new concerns should be authentatively set at rest by clearly indicating the limits within which this should be done. If this was not found adequate for the reasonable expansion of industries in the State, Government should make some arrangement with the Bank to provide further facilities that might be required."

8. "That the Stores Purchase Committee should as far as possible show preference to the articles made locally so long as their prices and quality are suitable and employ local firms whenever possible in placing such orders."

9. "That this Board is of opinion that Government should take steps to prevent the industrial concerns from concentrating in particular places resulting in unwholesome competition."

10. "That the Board is of opinion that an Advisory Committee in connection with the Mysore Railways be appointed forthwith and at least half of the total number of members on the Committee should be business men and that steps should be taken to secure for our merchants and business men representation in the Advisory Committee of the Madras and Southern Mahratta Railway."

The resolutions of the Sub-Committee *re.* the Grain Banks and the intensive farming were next considered. The Board desired that the following resolutions of the Sub-Committee might be submitted to Government for necessary action :—

1. "That Grain Banks may be started in suitable places if the people of the place come forward to start such Banks. All the assistance that could be required in this connection should be provided by Government Officers."

2. "That the chief factors that affect our agriculture are lack of knowledge, and capital, fragmentations of holdings, scarcity of water and that attempts should be made to form large landed estates and to draw up a scheme of colonization to ensure the supply of labour as irrigational facilities increase in the State.

The Making of a Statesman.

In a thoughtful and eloquently expressed article on "The Making of a Statesman", the Earl of Birkenhead, in the varied and attractive June number of the *Windsor Magazine*, speaking of the advantages of democracy, makes the interesting point that :—

"Statesmanship may be abstract, but statecraft is concrete. But, allowing for opportunism, which may often be nothing but a sublimated common-sense, I believe that the average man may be trusted to guide his own actions by sound and very definite principles. These may be acquired by the mere contact with life, or they may be instilled by the process of education. And we all have the rudiments of a civic conscience within us.

"Since these considerations have their bearing on the making of a statesman as such, they may become of practical interest to any reader of these lines. Leadership will always be required. Many keen partisans ever prefer to be led. Statesmanship itself is within easy reach. Application or originality may take a man almost anywhere. "The time will come when you will hear me," said Benjamin Disraeli, and such ideas as these are capable of considerable expansion. From any street-corner now the wind may blow a man along the avenue of personal distinction. That advantage at least must be conceded to democracy.

"For the ambitious I might adduce other encouragements. They are drawn from experience. The aphorism which forces on a poet the need, as poet, to be born, does not apply to the actor in public affairs. History, indeed, records the names of many statesmen whose genius has been, in the truest sense, innate. The halo of heredity hovers over some figures permanently enshrined in our annals. But the State itself is often glad to be guided by men who have had none of these advantages—by men, indeed, who in a sense can rise above them."

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Indian Economic Enquiry Committee Report.

By A. S. Venkataraman, B.A.

On almost all important problems concerning India we are always confronted with two sharply divided views, the one a Pro-Government view and the other a Pro-people's view. This is due to the disparity in outlook brought about by the absence of any complete identity of interests between the two. It is very often said that political bias colours all economic problems. If it is a reproach, both parties are to blame. As a matter of fact one cannot completely divest himself of any bias. The mere presentation of facts is itself a bias and more so, a forceful presentation in a decidedly marked way. More than anything else, politics and economics are so inter-related that "whether politicians like it or not the fact remains that modern politics become more and more a matter of economics". To quote the Hon'ble Lallubai Samaldas, "I have tried my level best to find out the line dividing economics from politics and I honestly confess that I have not been successful in doing so. The more one thinks of economics and its allied subjects, such as labour problems, including unemployment, land-revenue problems, Social Reform, trade, tariffs and transport, and even educational problems, one finds there is much of overlapping of these subjects, that it is difficult to say where one ends and the other begins."

On the economic condition of India, two distinct views crop up. There is the view that India is poor, is on the verge of starvation, is over-taxed and is unable to maintain a costly administration forced on her. On the other hand, the official view says that there has been an increase in the wealth and prosperity of the country and that the country is lightly taxed. The controversy waxed so intense as to call for an authoritative and independent enquiry. In the 1924 September session of the Assembly, a resolution was passed urging a comprehensive enquiry into the economic condition of the various classes of people, the per capita income, the burden of taxation equitable or otherwise and in general, the resources of the country. This demand was answered by a concession in the formation of a committee to examine the available material for framing an estimate of the economic condition of the people with a view to improve it and to suggest ways and means of a general economic enquiry. The committee consisted of 3 members, Pandit Hari Kishen Lal, Prof. Burnett-Hurst and Sir M. Visvesvaraya (*President*).

The object of the survey is indicated in these words: "The primary purpose of an economic survey is to collect and compile facts and statistical data relating to the economic condition of the people and it is too well-known to need any emphasis that numerous problems concerning the well-being of the people of British India are to-day awaiting treatment under the guidance best supplied by an economic survey. The results of such a survey should, among other things, lead to the adoption of measures for increasing production and wealth, measures such as the industrialization of agriculture, the development of industries and trade, the re-distribution of population according to the fertility of the various tracts, increasing the efficiency of labour and calling in the aid of machinery, science and capital for developing the country's vast resources and organizing its stupendous man-power."

The report that is now available is as usual

conspicuous by an absence of unanimity of views. Prof. Burnett-Hurst has chosen to write a dissenting minute. On the need for the collection of statistical material the whole body is agreed. How to collect it and who is to do it are problems that seem to evoke sharp differences of opinion. The existing statistical material is analysed under 3 heads :—

1. Statistics relating to finance, population, trade, transport, communications, education, vital statistics, emigration—more or less complete.

2. Those relating to production, agriculture, pasture, dairy-farming, forests, fisheries, minerals, cottage and minor industries, large-scale industries—satisfactory in some respects but incomplete or wanting in others.

3. Those relating to income, wealth, cost of living, indebtedness, wages and prices—no attempt is made to gather them on a large scale.

For purposes of an economic survey, the committee with the exception of Prof. Burnett-Hurst, recommends (*a*) intensive investigation in limited areas each year, of income, wealth, expenditure, indebtedness, special enquiries regarding particular phases of economic condition in local areas or particular classes of people, estimates of collective wealth by the inventory method, data in mines and industries to be furnished by those departments ; (*b*) co-ordination of such work by a Central Statistical Bureau at the headquarters along with Provincial Bureau in each province assisted by an advisory body for each bureau and Board of Economic Enquiry for each province ; (*c*) the agencies to conduct such data being (1) staff of inspectors under the revenue department for gathering statistics of production and clerks for the compilation of agricultural statistics, (2) qualified investigators for intensive enquiries under the statistical department ; (*d*) the cost of the scheme will be 56.79 lakhs recurring, 30.62 lakhs initial outlay for 2 years (including Central Bureau). Now, Prof. Burnett-Hurst holds strong views altogether different from the majority on (1) the methods of collection, (2) the agencies. He is of opinion that the central feature of the economic survey of the various classes of people should be a full description of their standard of living based on analysis of a large number of family budgets collected by intensive investigation, that the money value of real income of a family is no index of its economic condition, correlation with its size and composition, cost of living, indebtedness, etc., is necessary, that the estimates of National Income and wealth by the inventory method are too subject to qualifications and limitations to be of any value, that there should be a series of intensive and extensive enquiries. He suggests the transfer of agricultural statistics to the statistical department, the closer scrutiny of statistical material as gathered by revenue officers, intensive enquiries regarding cottage industries, wages, etc., to be conducted by a special staff under the supervision of the Provincial Board of Enquiry, the revenue department being an agency for enquiries, extensive or intensive.

In fact the differences of opinion arise from the fact that while the two other members, Sir M. Visvesvaraya and Mr. Hari Kishen, advocate the intensive investigation and the inventory method, as a working basis in the absence of a more satisfactory method, the Professor would have a thorough and detailed investigation, if that be possible or nothing at all. He ridicules the estimates of National Income and wealth.

As regards the 'agencies', he does not conceal his distrust and contempt of the revenue department and wants every investigation, intensive or extensive, to be done by qualified investigators. While we cannot deny that there is some truth in the remarks of the Professor, we must also bear in mind that the science of statistics is also imperfect and that by means of improved methods, even imperfect data may be made to yield dependable conclusions. Again if the revenue agency is not qualified even for extensive enquiries, then perhaps the entire agency that may be contemplated by the Professor to be sub ordinate to *ad hoc* Provincial Boards of Enquiry, may not all be necessary or out of place, if estimates of National Income or wealth are subject to limitations and if enquiries into individual wealth are at present inadvisable.

Apart from the dissenting minute of the learned Professor, criticisms have been levelled against the masses of statistics likely to be gathered at a great cost, an unending series of data, which would for the most part be unreliable. The latter part of it has been answered already. As regards the first, one wonders if sufficient attention has been paid so far to the growing necessity for statistics. The various departments, agricultural, industrial and commercial, as well as the various sections of the people corresponding to them,

are all in dire need of a fairly reliable data, if not absolutely exact, and it would be rash to suggest that this demand is unreasonable in this twentieth century. It would be a profitable enquiry in the first place if the Government could gather data regarding the expense at which statistical material is collected in different parts of the world. Probably it will be found that India too stands in need of the two bodies now proposed, not costly though in consideration of the results likely to be achieved and that they will, far from being a costly luxury, a bare necessity. What is proposed is not a new organization altogether but an improvement on and an expansion of an existing machinery, which, as it is, is imperfect in organization and unsatisfactory in functioning and therefore requires overhauling. Again the opinion that finds favour in some quarters, is that unless the Government is prepared to embark on a policy of active, agricultural, industrial and commercial development, no useful purpose will be served by the creation of a costly department which will therefore be a waste of public money. I fear this is putting the cart before the horse. A Government must first have information on agricultural, industrial and commercial matters before it is to embark on a policy,active or passive, and a department for the purpose should be formed at a cost adequate enough if the results are to be satisfactory. Almost every industrial country has and must have a full equipment of statistics in order that the administration may look before and after and shape its policy, agricultural, industrial or commercial, while for the agriculturist, the industrialist and the commercial folk, a statistical department is an indispensable machinery.

The Electrical Industry of the United States.

By Francis H. Sisson.

Vice-President, Guaranty Trust Company of New York.

Conditions affecting the cost and distribution of fuel during the war gave special impetus to the development of the electrical industry in the United States as a means of providing a cheaper and more efficient power supply. The lessons of that period are applicable in the further preparation of industry and transportation for the part which America is to play in the future economic progress of the world. Already American industry is confronting a growing intensity of competition with foreign producers as they progressively regain their place in world trade. Success in meeting this situation must depend in large part upon those features of production and transportation costs which are represented by mechanical power.

The rapid development of the electrical industry is an outstanding feature of the industrial progress of the United States in recent years. The output of electricity by the public utility power plants of the country last year was 55,928,000,000 kilowatt-hours, or forty-three per cent more than in 1919. These figures include the production of central stations, electric railway plants and certain other plants that contribute to the public supply. In addition to this power production by public utility plants, there is considerable private generation. But this element of the electrical supply is of diminishing importance. In 1909 about thirty-six per cent of the installed motor capacity in manufacturing represented central station power, while in 1923 the estimated proportion was sixty-one per cent.

The recent history of the electrical industry and the wide range of possible extensions of the use of electricity warrant the expectation that this industry will play an increasingly important part in the economic progress of the United States. Not only for general power purposes in manufacturing, mining, etc., but in the field of transportation, the potential expansion of the use of electricity is enormous. And there is a growing appreciation of the important market for electricity that may be developed in supplying light and power on farms. The waste involved in the ordinary consumption of coal for power purposes is generally recognized. About one-third of the country's output of bituminous coal is consumed by the railroads. A large part of the cost of hauling this fuel for railroads and that used by the industries can be eliminated by the use of electrical energy. Moreover, at present most consumption of coal entails the destruction of what would be very

valuable by-products if separated from the carbon and conserved. Economical separation of these commodities is possible only for large units.

Notwithstanding the greater reliance upon coal for energy, water power represents a very important additional resource. Of the total potential hydraulic development, variously estimated at more than 50,000,000 horse-power, about one-fifth has been developed. Prior to 1920, the development of America's water power was retarded partly by certain unfavourable features of government control over the sources. The Water Power Act of that year provided a Federal Power Commission and a system of licenses for power works on the public domain, in national forests, and on navigable rivers. Sites representing about eighty-six per cent of the total water power of the United States are under Federal ownership or control. The Act has been accepted in good faith by the electrical industry as a whole, and the results are gratifying. In three years the Commission has issued permits and licenses for an aggregate installation of 7,500,000 horse-power, while works representing 2,400,000 horse-power were built or are under construction.

Further progress in the provision of interconnected power systems will directly involve water-power development. Coal, however, will continue to be the country's main source of energy. Flowing water constitutes but a small part of the potential power supply, while the coal reserves are abundant. Nevertheless, the pressure of comparative costs, as well as the obligation to make only a frugal use of even an abundant natural resource, will, with increasing emphasis, require efficient processes of coal consumption.

Important social changes may follow the growing use of electricity. One possibility is a wider diffusion of the industrial population, with various modifications in standards of comfort and well-being attainable by the masses of industrial workers. Carrying electricity to the farms and the use there of electrical appliances which are common in the cities and towns represent another step in overcoming the difference between rural and urban conditions of living.

Education in the United Provinces.

By "Academicus".

There are no striking developments to record, but quiet progress was made in many directions and much useful work was accomplished. In university education the prominent feature has been the rapid increase in numbers. In the Aligarh Muslim University the number of post-Intermediate students increased from 389 to 711, while the total number of students including the Intermediate and school classes was nearly 1,800. The Provincial Universities of Lucknow and Allahabad have each over 900 post-Intermediate students. The large increase in numbers has strained the financial resources of the universities and has created difficult problems of internal administration. If proper standards are to be maintained, an adequate and competent staff is required to give the students that individual attention and stimulus which is a marked feature of residential and teaching universities in England. It is a matter for satisfaction that increasing attention is being paid at the universities to the study and development of the vernaculars. Debates in Urdu and Hindi, the staging of Indian dramas, and poetical exercises are now a common feature of university life. There is, however, considerable danger that the pendulum may swing to the other extreme and that the study of English may be neglected to an extent which may lead to grave consequences extending beyond the educational field. There is no reason why a thorough mastery of the mother-tongue should be incompatible with an accurate knowledge of English. The experience of bi-lingual teaching in Wales, in Canada, and in South Africa shows that the difficulties of acquiring simultaneously a mastery of two languages are not insuperable.

The disparity in the percentage of passes in the degree examinations of the four universities in this province is a somewhat disquieting feature of university education and much vigilance will have to be exercised by the universities concerned against a possible deterioration of standards. A low standard of examination does much harm to the more brilliant student. He is able to pass his examination without much mental exertion and need not therefore acquire those habits of

thoroughness and steady and continuous application to work which count so much for success when college days are over. It may be that under the existing system of university examinations the strain on the student of average capacity is too great, while the more talented undergraduates find the standards not sufficiently exacting for continuous mental effort. The solution perhaps lies in a proper system of honours schools for the more brilliant men at the universities, reserving the pass degree for the less ambitious and the less talented. Another noticeable feature is the inadequate provision for a working knowledge of French and German without which the pursuit of higher Western learning is rendered particularly difficult. This is a matter which, no doubt, will receive proper attention from the universities concerned.

The Vice-Chancellor of the Allahabad University draws attention to the large amount of time spent by teachers in attending meetings of university bodies, to the detriment of their main function, namely, the teaching of undergraduates. The machinery of university administration may have to be simplified if teaching is not to be subordinated to administrative detail.

Oriental Institutions.

The number of scholars studying in recognized Sanskrit pathashalas was 5,000 and in aided Arabic madrasas over 7,000. These indigenous institutions maintain a high standard of teaching of the Oriental classics on traditional lines and are the main source of recruitment for language teachers in Government schools.

Secondary Education.

While no new Government Intermediate College was opened during the year, three Aided High Schools were raised to the Intermediate standard, bringing the total of such colleges to 17. The number of students in Intermediate classes was over 3,000. There are clear indications that Intermediate Colleges are rapidly gaining public confidence and there is a growing demand for the opening of more such colleges. The Director recognizes that the administration of those colleges which comprise classes III to XII is difficult and he proposes to meet the difficulty by organizing, where possible, the lower classes as separate junior schools. He also draws attention to the need for more accommodation both in Government and aided colleges. The Board of Intermediate and High School Education devoted considerable attention to the question of introducing vocational courses in the curriculum of High Schools and Intermediate Colleges and has now decided to institute a diploma course in agriculture. The enrolment in secondary schools, English and Vernacular, was for the first time more than 100,000, over 55,000 being enrolled in English schools and over 47,000 in vernacular schools.

The majority of the English schools are aided and though the proportion of trained teachers has increased, over 80 per cent of the teachers are still untrained. To quote the words of the Report: "Complaints of inadequacy of pay, insecurity of tenure, delay in the payment of salaries, and too frequent changes of staff continue to be made." Some school managers fail to realize the importance of a contented and competent staff and are tempted to engage inferior men on inadequate salaries, but allowance must be made for the weak financial position of many of the aided institutions. The teaching in English schools has improved but it is not yet altogether satisfactory. Government note with regret that the oral examination in English and the practical examination in science at the High School Examination have been discontinued and they hope that the measures taken to replace these examinations will prove effective. If they fail in their purpose, there should be no hesitation in recasting the present arrangement. The Director reports that manual training is the most unpopular among the optional subjects. Efforts should be made to make such training as attractive as possible and to impress on teachers and students alike its educational value. The boy scout movement is spreading rapidly in the schools and should prove a potent factor in moulding the character of boys and in training them in social service.

Middle Vernacular schools continued to do good work, but the education imparted in them has so far been of a literary character. It is proposed to introduce agriculture as a compulsory subject in ten of these schools and, if the experiment proves successful, to extend it gradually to others. The teaching of English as an optional subject is also much in demand in these schools and measures are being taken for increasing the facilities for imparting such instruction.

Primary Education.

There was an increase of 604 schools and over 53,000 scholars, but the bulk of the increase was in the lower schools (about 48,000). The statistical tables appended to the Director's report show that one scholar out of every

eight in the vernacular schools is in the upper primary class, while one in about 20 reaches the middle section. To keep the boys longer at school is still the main problem. The existing system of distributing grants to district boards was felt to be cumbersome and was consequently modified to enable the boards to work out their educational programmes with a clearer knowledge of the amount which they were likely to receive from Government. The curriculum of primary schools has been much criticized. It is alleged that it creates a distaste among the scholars for following their hereditary professions. This criticism is not new nor are the remedies suggested always practical. However, the whole question of primary education has been examined by an officer on special duty whose report is being published. The experiment of introducing compulsory education in municipalities has on the whole worked satisfactorily, but some reports indicate that there has been a lack of proper supervision and the facilities provided for compulsory education have not been utilized fully. A disquieting feature is the tendency among some local bodies to utilize vernacular schools for the purpose of political propaganda. This is likely to cause a serious set-back to the progress of education on right lines and Government trust that local bodies and public opinion will set their faces against such attempts.

Education of Girls.

Progress has been slow for reasons which have been mentioned in previous reports and need not be repeated here. The Chief Inspectress comments adversely on the condition of primary schools, and it is clear that much concerted effort will be required for their improvement.

Education of Special Classes.

European schools have maintained their position and three high schools have been recognized by the Intermediate Board for the purpose of the Intermediate Examination. The education of Mussalmans is now engaging the serious attention of that community. The increased powers given to local bodies in regard to education have roused fears that a minority community may not receive fair treatment at the hands of the majority ; and that in the employment of teachers, in the distribution of Government grants, in the opening of new schools Muslim interests may not always be kept in view. Government recognize the importance of assisting in every legitimate way the expansion of education among Mussalmans and they feel confident that local bodies will not fail to realize their responsibilities in this matter. The report shows that Muslim education has made satisfactory progress during the year. While the number of Hindus under instruction has increased by 6.2 per cent only, that of Mussalmans has increased by 9.3 %. The increase is especially noticeable in Arts and Intermediate Colleges and in Islamia schools and maktabs. In normal and training schools, in technical, industrial, and commercial institutions of lower-grade Mussalman students are well represented. In institutions of collegiate status, however, there is room for considerable improvement. The percentage of Mussalmans in the Medical College is about 12 and in the engineering and commercial colleges about 4. The percentage of scholars in the training colleges for teachers is about 24 and shows that Mussalmans are beginning to devote themselves more and more to an educational career.

General.

The total expenditure on education was over three crores, 53.92 per cent of which was contributed by provincial revenues. Government have been criticized for allotting a disproportionately large share of their grants to higher and secondary education, while primary education is alleged to have received less than its due. Critics forget that since the Reformed Council came into existence the education budget has to be voted by the Council and all educational expenditure, with the exception of a few non-votable items, is expenditure which has been approved by the Legislative Council. If Government have sinned, they have sinned with the approval of the Legislative Council, which passed their educational budgets. The criticism is, however, somewhat wide of the mark. The quinquennial report on education for the year ending 31st March, 1922, showed that during that period the total recurring expenditure on primary education has risen by 148 per cent. Education must be treated as a whole. The broadening of its base should not mean a sinking of the general level. Expansion is required in every direction to meet the growing needs of the country. All grades of education will need further funds if progress is not to be lop-sided. A prominent place is now given to education in the discussions of the Legislative Council and the constant play of public opinion on the administration of the department of education has a bracing effect on its activities.

Co-operation in Bihar, 1924.

By "The Bystander".

As this is the first report for the Province for a full year ending on the 31st December, there are no figures with which suitable comparisons with years can be made. The total number of societies of all kinds working on the 31st December has increased from 5,616 to 6,427, while the aggregate working capital is now Rs. 3,48,00,000 against Rs. 2,87,00,000 in 1923. The rate of expansion seems steady and in keeping with sound development. The Bihar and Orissa Provincial Bank continued to prosper, attracting a substantial increase in its share capital during the year. It has now more deposits than it requires, and has recently reduced its rates of interest. The central banks and unions are on the whole in a satisfactory position, but the newer banks, which now maintain an adequate supervising staff from the commencement of their existence, tend to make relatively small profits or even fail to make profits at all, with the result that their reserves are increasing very slowly. This renders it all the more necessary for the stability of the movement that their paid-up share capital should be adequate. In case of this sort the Registrar should exercise constant vigilance. One of the chief problems which still faces central banks is the difficulty of increasing their affiliated societies beyond the limit of about 200, owing to the impossibility of controlling a larger number efficiently. Various methods of overcoming this difficulty have been tried. Guarantee unions certainly make the task of the central banks easier, but they cannot by themselves afford a solution. Wherever possible, the Registrar is dividing up the area now allotted to each central society, but as a rule satisfactory directors cannot be obtained in outlying parts of a sub-division, while isolated central banks and unions find it very difficult to attract deposits. In some cases a second or joint manager has been appointed to hold charge of a particular area, and in others branches have been opened. None of these devices appear entirely satisfactory, and it is possible that at present no one solution of the difficulty can be found. Eventually, as education spreads and the members of primary societies gain further experience through the development of guarantee unions, local banking unions managed more or less by the societies themselves will become practicable and command public confidence

Taken as a whole, the liability side of the balance sheets of central societies seems satisfactory. The gradual increase in savings deposits is very welcome, since it enables the movement to obtain a proportion of its money at lower rates than it has to pay for its fixed deposits, and provided that a due proportion of long term money is attracted at reasonable rates, there is no fear that the savings bank departments will affect the stability of central banks and unions. The assets side of the balance sheets is less satisfactory. The Registrar reports that the average collection for the whole year was only 57 per cent of the demand. This result is not only poor in itself, but it is worse than previous years and is no better than the percentage achieved by primary societies, whereas the central societies should always make better recoveries than their constituents. The Registrar ascribes this setback largely to lack of energy on the part of the directors, and there is no doubt that in this he is correct, since those central banks which make special efforts to collect their dues are always more successful than the rest. Central societies should realize that one of their chief duties to their primary societies is to teach them the supreme necessity of punctual payment of their dues.

There has been a steady progress in the formation of guarantee unions to which nearly one-fourth of the total number of agricultural societies is now affiliated. The classification of societies affiliated to these unions, of which 40 per cent are returned as good societies, while only 3 per cent are classed as bad, is sufficient alone to prove their value, and the more they can be extended the better for the movement in Bihar and Orissa.

It is to be regretted that the percentage of recoveries to the demand (57) is far from satisfactory. It is not mentioned by the Registrar in his Report, neither are figures for previous years given. The ratio for the previous four years, however, was 63, 61, 69 and 61 per cent, respectively, and there has thus been a definite falling off. The classification this year also shows only 20.5 per cent of the societies as "model" and "good" as against 23 per cent in 1922-23, while the percentage of "bad" and "hopeless" societies has risen from 9.6 to 10. These results are not re-assuring, and the hope of the Government might be re-echoed that the co-operators

of the province as a body will strain every nerve to improve them in the present year. In another respect also the position is not so good as in 1923. It is true that there has been an increase in the share capital of the primary societies as well as in their reserves and in the deposits held from members. The total amount of capital thus belonging to the members is now 21.96 lakhs, consisting of 5 lakhs in shares, 14.18 lakhs reserve and 2.78 lakhs deposits from members, as against 18.67 lakhs, consisting of 3.71 lakhs shares, 12.36 lakhs reserve and 2·60 lakhs deposits held from members in 1923. While, however, the aggregate internal capital has increased, the percentage to the total working capital has fallen from 16 to 15. The Registrar seems alive to the great importance of increasing this class of capital in village societies, partly in order to inculcate thrift among the members, partly to give them a greater stake in their societies and partly to reduce the dependence of the movement on the outside money market. What seems to be required is an intensive campaign in backward places. The importance of share capital for primary societies has been recognized by the Federation and is constantly emphasized by all leading authorities on co-operation. Moreover, Bihar and Orissa lags behind almost every other province in this respect. A real effort should therefore be made to make the bye-laws regarding share capital a reality in all societies.

Non-agricultural societies number only 336 out of a total of 6,427, while their aggregate working capital is only 26 lakhs. Interesting as they are, therefore, they are relatively of small importance to the people of the province, although some types hold great promise for the future. Societies of wage-earners, peoples' banks, provincial associations, fishermen's societies and artisans' societies seem to be developing satisfactorily, while the societies among depressed classes are accomplishing useful social work. Weavers' societies, however, as in most other provinces, give most disappointing results, and the two large stores organized at Bhagalpur and Ranchi have had an unfortunate history. In most cases, faulty management is mainly responsible for the ill-success, but the ignorance and apathy of the weavers themselves are hard to overcome. One or two experiments are now being made with the assistance of the Industries Department to organize weavers' stores which will be managed entirely by that department with an advisory committee, and it is hoped that, if they prove successful, in years to come they may develop into truly co-operative institutions. The Registrar has submitted a special report on the co-operative stores in the province. He ascribes the main cause of the failure of certain stores to the free supply of money from outside. This encourages the committees of the management to indulge in speculation, which they almost certainly would have avoided had the money been their own. We note that Government are considering his report and orders will be passed on it separately.

The percentage of primary societies re-audited by the assistant registrars and divisional auditors seems unsatisfactory. Last year, the local Government laid down that both classes of officers should conduct a test audit of 5 per cent of the societies in their respective areas. This test audit is to include a careful checking of the balance sheet and the individual accounts of the members, as well as a fixed percentage of all the items in the accounts, such as the calculations of interest. The test audit is one of the most important duties, if not the most important duty, of the assistant registrar and divisional auditor, and whatever other part of their work may be left undone they are never to fall behind the minimum of 5 per cent for test audits. It is satisfactory to observe that such test audits as have been carried out have not disclosed any unsatisfactory work on the part of the local auditor. In order, however, to make certain that the subordinate staff of the Federation is properly trained and that the technical side of audit and accountancy is maintained at a high level, the local Government have now appointed a chief auditor on Rs. 400—25/2—600, and they trust that, with his assistance, the Registrar will be able continually to improve the standard of this most important branch of his work. For propaganda a development officer has been appointed by the Federation, while a separate fund has been started to which Government have promised a contribution of Rs. 5,000 a year on condition that double that amount is contributed by the societies themselves. A gazette is also being published quarterly. This organization, if wisely used, should do much to assist the development of co-operation in the province. The Report shows that the Agricultural, Education, Public Health and Veterinary Departments all find the co-operative organization of the greatest assistance in getting into touch with the rural population.

The Agricultural Department in particular practically depends on it for the dissemination of new crops, improved seed and manure and new methods, and the Registrar's remarks show that much good work is being done.

The permanent Registrar Khan Bahadur Mohiuddin Ahmed was absent in Europe for the greater part of the year, during which he studied co-operation in the United Kingdom, Ireland, Manchester and Denmark. During his absence Rai Bahadur Durga Prashad officiated for him with credit, and has worked with conspicuous ability. The numerous non-official workers, without whom the movement could never succeed, deserve the gratitude of all their fellow citizens, but they are still all too few and we hope with the local Government that the propaganda now being developed by the Federation will result in numerous additions to their ranks, especially from among the landlords, who ought to be the first to welcome the Movement into their midst.

Bombay's Sea-Borne Trade.

By Christopher Hay, M.A.

From a statement issued by the Director of Information, Bombay, we note that the outstanding feature of the year was the unprecedented flow of the precious metals into Bombay, says the report on the Sea-borne Trade and Customs Administration of Bombay Presidency for the year 1924-25. Gold in particular poured in as inevitably as it poured into Danae's tower. With a balance of trade in merchandise more than Rs. 155 crores in her favour, India was certain to absorb large quantities of bullion, despite Government's very considerable remittances amounting to about Rs. 57 crores in the shape of Council bills, purchases of sterling and the like. Over and above this, the Indian bullion market and consumer could not fail to be attracted by the price of gold falling below its pre-war level, as a result of the appreciation of sterling almost to its gold parity and the appreciation of the rupee in terms of sterling. The total value of Bombay's imports of gold and silver on private account left all previous records far behind, and actually amounted to Rs. 94½ crores, a figure over Rs. 36 crores higher than the record established in 1922-23. The actual quantity of gold imported was over 11,727,000 fine ounces, valued at Rs. 72⅓ crores, and imports of silver exceeded Rs. 22 crores in value. Little of the gold was re-exported, but Rs. 3⅔ crores worth of silver was shipped from Bombay. Thus the value of the retained imports was little short of Rs. 90½ crores.

This glut of treasure was bound to react in some measure on Bombay's trade in merchandise. Bombay is India's bullion market, and imports bullion for the whole of India. Hence Bombay was so preoccupied in buying its favourite commodity, gold, at attractive prices that its attention was partly diverted from ordinary merchandise. Consequently the port's trade in merchandise declined in value, despite the fact that the trade of all other provinces, especially Bengal and Sind, expanded. But if Bombay's trade be analysed, it will be found to be much more satisfactory than appears at first sight. The decline of Rs. 1.21 crore under imports is accounted for more than four times over by poor receipts of machinery and millwork and of railway plant and rolling stock. Naturally little new machinery could be expected to arrive when the cotton spinning and weaving industry in Bombay, as in other parts of the world, was suffering from severe depression, and the decline in railway stores was largely due to a change in policy whereby smaller stocks are maintained. Iron and steel receipts fell slightly in volume but by Rs. 54 lakhs in value. British shipments contracted by 37,000 tons, but low-priced Continental products were in no way checked by the measure of protection granted by the legislature to the Indian industry. On the other hand, there was a clear consumptive demand for many imported commodities. Thus imports of sugar expanded by 55,000 tons and attained a value of Rs. 5.39 crores; manufactures of cotton advanced by Rs. 94 lakhs, cotton twist and yarn by Rs. 66 lakhs, woollen manufactures by Rs. 55 lakhs, and artificial silk by Rs. 51½ lakhs. Imports of real silk piece-goods increased in volume, but their value declined owing to a fall in the price level. Record arrivals of raw cotton, mostly from Africa, are also worthy of remark; their value advanced from Rs. 2.46 to Rs. 4.24 crores. "But," says the Report, "it is not enough to consider values only; prices must also be taken into account before the volume of trade can be estimated. The prices of

imported commodities have generally fallen, and a decrease in value has actually been accompanied by an increase in volume."

Imports of foreign coal have further fallen by 86,000 tons to 289,000 tons in quantity and by Rs. 26.26 lakhs to Rs. 77.52 lakhs in value owing to smaller shipments from Natal, Portuguese East Africa and Australia. Arrivals from the United Kingdom and Japan have increased. The decrease in foreign coal is no doubt partly due to the growing use of fuel oils by steamers, railways and industrial concerns, and to some extent to Bengal's efforts to re-capture the Bombay coal market. Shipments of Bengal coal have further advanced by 51,000 tons to 177,000 tons in quantity and by Rs. 8 lakhs to Rs. 42.81 lakhs in value. The prices of English, Natal and Bengal coal were lower than those obtaining in the preceding year.

Imports of matches have declined for the third year in succession. The fall in the year under review was striking, being from 4,878,000 to 2,411,000 gross of boxes in quantity and from Rs. 53.21 to Rs. 24.13 lakhs in value. The high rate of duty has undoubtedly affected imports materially, but the heavy specific duty imposed on splints and veneers in March 1924 has not prevented the manufacture of matches in India from imported materials. Various factories near Bombay have also been experimenting with indigenous timber, but with poor success hitherto. The products of these factories, and a factory started under the auspices of the Swedish combine, have won a considerable market. They are nastier but cheaper than the imported article.

The *export* trade in merchandise also did much better than a decline of Rs. 6¾ crores in value would indicate. This decline was solely due to the fact that shipments of raw Indian cotton fell from the previous year's record figure of 545,000 tons to 422,000 tons. The value declined from Rs. 76½ to Rs. 63¼ crores. The reason is not far to seek; at long last 1924 witnessed a large American crop, and both Europe and Japan needed and took less Indian cotton. Further the Indian 1924 crop, though large, was late. Consequently the export season started late and was less advanced than usual when the fiscal year ended. Apart from cotton there was a distinct and well-distributed improvement. In particular, seeds expanded in value by Rs. 2½ crores, raw wool by Rs. 98½ lakhs, and grain, pulse and flour by Rs. 90 lakhs. There was a welcome expansion of 16¾ million yards in the exports of Indian cotton piece-goods, and the value rose from Rs. 4.27 to Rs. 4.62 crores. Exports of Indian cotton yarn declined in quantity but rose in value. The explanation is that though Bombay has lost her China market, she is pushing sales nearer home in Persia, Arabia and Syria, countries which seem to prefer less coarse counts than China and to be willing to pay for them.

There were no very striking changes in the direction of Bombay's trade. The share of the United Kingdom again declined, but that of the Empire as a whole hardly changed. Shipments to Continental Europe were lower, but imports thence improved. Japan's share remained constant, and is second only to the United Kingdom's.

Foreign Trade (Private).

Imports.—182 crores 47 lakhs, an increase of 46 crores.

Exports.—112 crores 82 lakhs, a decrease of 5 crores 9 lakhs; a total foreign trade of 295 crores 29 lakhs, showing a gain of 40 crores 90 lakhs.

Coasting Trade (Private).

Imports.—34 crores 51 lakhs, a decrease of 6 crores 29 lakhs.

Exports.—34 crores 89 lakhs, a decrease of 3 crores 87 lakhs; giving a total coasting trade of 69 crores 41 lakhs, a net decrease of 10 crores 17 lakhs.

Adding to this figure Government transactions amounting to 2 crores 21 lakhs, the total sea-borne trade amounted to 366 crores 92 lakhs, an increase of 30 crores 43 lakhs.

The gross revenue collected by the Bombay Custom House expanded from Rs. 11 crores 79 lakhs to Rs. 13 crores 14 lakhs.

Coal Industry of the Madras Presidency.

The Report of the Department of Industries, Madras, for the year ended the 31st March 1924, states:—It is regrettable to have to record that the boring operations conducted by Messrs. Best & Co., in the Beddadanole area have not yielded satisfactory results, although five boreholes were sunk and one of them was taken to a depth of 900 feet. Shortly before the close of the year, Messrs. Best & Co., reported that they had abandoned prospecting operations for coal in the Madras Presidency. The experience of Messrs. Best & Co., in the conduct of boring operations in the Beddadanole area leaves little room for doubt that no workable seams of coal exist in the Kistna and Godavari districts.

Agriculture in Bombay.

By "Son of the Soil".

In the introduction to his Annual Report for 1923-24 the Director of Agriculture, Bombay, refers to certain important features in the present agricultural economic situation. He points out that the cotton crop continues to be the main source of agricultural wealth to the Province and owing to the sustained high prices which have prevailed during and since the War there is much prosperity in the principal cotton tracts.

On the other hand the sugarcane industry is going through a period of depression. During the War the beet sugar industry which previously contributed about half the total sugar production of the world, was completely dislocated. In consequence of this and also in response to the increased demand for sugar during the War the cane sugar industry entered upon a period of prosperity. Since the conclusion of the War the beet industry has largely recovered and the sugar supply of the world is abundant while the purchasing capacity of the people in most countries has fallen—hence there has been a slump in sugar values which has not been associated with a corresponding reduction in cost of production which has risen greatly in this Presidency. In the year under report the sugarcane-grower was faced not only with an unfavourable season but with a very poor market—the price falling at one time to Rs. 18 per palla of 250 lbs.

"Thus many growers," says the Director, "have incurred a loss on their sugarcane crop and tenants are demanding a reduction of rents while some have actually run away. It is anticipated that there will be a considerable contraction in the area under sugarcane in the current season (1924-25) amounting to perhaps 10 per cent on the Deccan Canals. This Department is therefore giving special attention to the problem of reducing the cost of production, more particularly through the reduction of the heavy applications of costly artificial manures which could be economically adopted in the years of prosperity.

Another important fact, revealed by statistics, is the loss of efficiency in recent years of the wells used for irrigation. The figures are somewhat disconcerting but it is recognized that the efficiency of most of our wells ultimately depend upon the performance of preceding monsoons and there is reason to anticipate that the recent very heavy rains in Gujarat will materially contribute to the recuperation of the underground sources of water supply."

The most noticeable feature of the agricultural season of 1923-24 was the late breaking of the monsoon and its abrupt withdrawal much before the usual time. The result was that except in the Konkan, in the vicinity of the Western Ghats and in the irrigated areas the outturn of crops—both Kharif and Rabi—fell far short of the average. In Sind, however, crop yields were, on the whole, satisfactory.

In the Presidency proper the gross area cropped declined by 232,000 acres, the districts that mainly contributed to this decline being the whole of Gujarat (—127,000 acres), Ahmednagar (—71,000 acres), Poona (—109,000 acres), Satara (—77,000 acres) and Belgaum (—48,000 acres), due to unfavourable rains. Against this there was a rise in West Khandesh (44,000 acres), Nasik (90,000 acres), Bijapur (57,000 acres) and Dharwar (37,000 acres), due to the suitability of rains at sowing time. The area cropped more than once showed a decrease of 389,000 acres, the decrease being shared by all the districts,—thus reflecting the deficiency of the monsoon during the year. The net area cropped increased by 156,000 acres.

In Sind, the gross and net cropped areas rose by 59 and 88 thousand acres or by 1.4 and 2.2 per cent respectively mostly in the south but the twice cropped area declined by about 30,000 acres, the decrease being shared by all the districts.

The assessed occupied area remained almost the same in the Presidency and in Sind but the unassessed cultivated area fell by 5.3 per cent in the Presidency and rose by 11.4 per cent in Sind.

Three-fourth of the cultivated area of the Presidency is devoted to growing foodstuffs, bajri, paddy, wheat and gram being the most important crops. Cotton is the largest non-food crop.

The work of the Department of Agriculture in ascertaining, by experiment, investigation and research, methods by which the produce of agriculture can economically be increased in quantity and improved in quality, continued during the year. It has also taken steps to get these methods introduced into practice. Special attention is devoted to cotton, and improved strains have been put out in the Dharwar area,

one of which is estimated to give an increased yield of Rs. 13 per acre ; while in the Surat area a new strain has been introduced by the Department and extensively grown with the result that a premium of from Rs. 20 to Rs. 25 per candy has been obtained for the lint. Improved strains of rice, wheat and jowar have also been put out and the introduction of the Spanish pea-nut variety has led to a marked increase in the area under groundnut. Special research schemes, most of which are financed by outside sources including the Indian Central Cotton Committee and the Sassoon David Trust Fund, deal with the devising of means to check insect pests and the finding of remedies for the diseases of various plants, improvement of varieties, etc. Improvements in the methods of agriculture have achieved good results especially in Surat where ridge cultivation has resulted in a remarkable improvement in the yield.

The Agricultural Engineering Department during the year paid special attention to the designing of implements, while the Horticultural branch was engaged on work connected with fruits. The Department also rendered direct services to the public in connection with the supply of seeds, implements and manure, the boring of wells and the designing of pumping installations.

There were 173 students on the rolls of the Poona Agricultural College which continued to maintain its position as probably the best known Agricultural College in the East !

The expenditure on the Department was Rs. 15,12,000 and receipts Rs. 3,39,000.

A Note on the Application of Zoning to Bangalore City.

By T. Ramachandra Rao, B.A., A.C.E.

Executive Engineer, Bangalore City Municipality.

'Zoning' is a modern feature in town planning introduced by go-ahead Americans in the development of their cities. It is a system by which different portions of a city are formed into different zones of Civic and Social activities with slightly differing laws of administration to regulate the width of roads and streets, heights of buildings, open areas, water supply, conservancy, etc. Instead of one rigid municipal law applicable wastefully to all parts of a city, it is modified just to suit the peculiar requirements of each, separately and no more, thus economizing cost of administration, while providing the largest possible amenities. Residential suburb is not mixed up with commercial, nor an industrial with an administrative block. Such incongruities as building a Soap Factory next to the Minto Ophthalmic Hospital, a Taluk Office in Doddapet Chowk, a residential mansion on the Kemmannagundi Road, or a temple in Cubbon Park and so on, are intended to be prevented by the system of Zoning. If the Factory or the Industrial Suburb is kept entirely separate from residential quarters by Zoning, it will be possible to economize water supply by carrying water at fixed intervals, and through a system of big bore pipes to maintain the requisite pressure of delivery ; otherwise big bore service connections from mains to factories will have to be made next to small bore house service connections, making service very irregular. Water cannot be cut off from factories when not required, without doing the same to houses, unless extra stop valves and staff are employed. If a residential street is not a commercial street, it need not be more than 25′ or 30′ wide, and the space thus economized may be added to the house-sites to give each dwelling place more elbow room. In addition to the saving in the cost of original construction of Roads, the cost of upkeep in a purely residential street will be comparatively smaller. A separate rule to regulate heights of buildings in a CommercialSuburb with wide roads, is possible to help people to build on every available square foot of costly land and turn it to good account. No open areas in front of buildings nor lateral ventilation need become a desideratum in this class of buildings. In a limited area, used only during the day, as in a purely commercial suburb or trade block, the flushing system of conservancy may be made obligatory without much consumption of water for flushing, and a large economy obtained by the removal of public urinals and latrines and the scavenging staff. By keeping together public offices and other institutions of administration

in one Zone, and grouping together several Zones like an Education Zone (central schools and colleges) a Shop Zone, an Industrial Zone, etc., it will be possible to keep down the initial cost of a telephone system by reducing the length of wiring, but making the service more efficient. If a Zone of poor houses is created with suitable rules against combining any two or more houses into a cottage or bungalow, or against raising the rent above a maximum, it would militate against any speculative tendency on the part of the owner of the house in that Zone, and the rents would be steadied. It is believed that much of the rise in house-rent is due, among other causes, to the potentiality of house-property, however rickety it may be, being rebuilt, say, into a three or four storied Bank building or some other building of like nature at some future time. If such building-Castle-in-the-air is prevented by limiting the aspirations by Zoning, *i.e.*, by fixing once for all the scale of improvement the property can undergo and the use it can be put to as being situated in that Zone, then the value of house-property or the rental value is not likely to rise to anything like what it has been sometimes.

The above broadly illustrate a few of the advantages in Civic convenience and cost, accruing by the system of Zoning. Of course, the considerations controlling the basis of Zoning of American cities are entirely different from what they ought to be in India or, in Bangalore City with its peculiar geographical, social and economic and other conditions. Our wise forefathers seem to have appreciated, though only to a limited extent, the principle of Zoning even more than the modern American. The old city of Bangalore, small though it was, was divided into Zones for various guilds or professions, sometimes on socio-religious basis. For instance, all Ganigars lived in one block, all Pinjars in one, all Patnools in one block and all Brahmins in two or three detached blocks. Bazaars were concentrated in Doddapet, Chikkapet, Akkipet, Tarugupet, etc. Business seems to have gone on in quite an orderly fashion, and according to the standard of amenities then expected, very little was felt wanting. But the old order changed, and in its rapidity has created confusion.

When the New Extensions were added to the City, though on a very lavish scale, some idea of Zoning seems to have been kept in view, as separate roads and blocks had been set apart for Bazaars, for Weavers, for the Patnools, for the different communities and so on. But latterly a sort of democratic zeal for leaving every citizen full liberty to deal with his property just as he likes has manifested itself, with the result, for instance, that an old dwelling house in the city has been partly converted into a Soapnut Factory, another part into a coffee shop, a third into a boot shop, with an upper floor for a lawyer's office or a student's study, the owner of the house still living in the low mud-roofed house at the remote back in his secluded serenity, and with a pit latrine and 3′ diameter unsteined well by the side of it. Even the Extensions are changing their aspects rapidly by building factories, small and big, shops, Hostels, clubs, etc., amidst what was originally intended purely for residential quarters. If the other institutions are deemed indispensable, their location must be adequately thought out and confined to distinct blocks so that there is no unnecessary, if not any commingling.

Zoning does not require that all residential quarters in a city, however large, should be in one huge block or a commercial or trade centre in one huge block, etc., but it requires, that each Suburb should be planned off separately with varying restrictions, keeping each kind of avocation, activity and other well-being of a modern Citizen together and in separate Zones, so that any rapid changes attempted behind the back of the Municipality are easily checked, and the cost and the rents of houses steadied.

At a Conference held in the Kremlin at Moscow a series of "Bolshevist victories" was announced which, it is claimed, will revolutionize, not only the whole of the Russian countryside, but also the whole of the world where cereals are cultivated. The Institute of Applied Botany has, it is said, produced several new species of grain capable of withstanding both the summer and winter climatic visitations which so often produce famine in Russia, and, to a great degree, the pests which attack crops and ruin harvests. The Conference considered several new species of grain and grasses, but most attention was attracted by "Cesium III," a new summer wheat which will, it is declared, under favourable climatic conditions, yield double and treble the harvest which may be procured from the best seeds hitherto known. It leaves the American "Marquis wheat" quite outclassed, both in respect of productivity and the quality of its flour. It is affected only slightly by a dearth of rain, and no drought can produce a real harvest failure.

Co-operative Farming in Sind.

By Pritamdas Hukumatrai Shahani,

Secretary, Sind Branch of Co-operative Institute.*

In Sind culturable land is about 15 million acres, including nearly one million acres of the Khairpur State. The rainfall being scanty and unreliable, almost all the cultivation is carried on by irrigation. Owing to a limited supply of water and labour, only about 31 per cent of the land commanded by the present canal system, or less than two and a quarter million acres, comes under cultivation annually. Of this 72 per cent is cultivated during the inundation season and 28 per cent during the dry season.

After the completion of the Barrage Canals it is estimated that about 1½ million acres of new land would come under irrigation, making a total of 8 million, mostly on the perennial system under command of the canal system, of which 6 million acres would come under cultivation annually. This should more than treble the agricultural produce of Sind.

Hitherto the monopoly of agricultural land has been confined to the hereditary Zamindars, or to Capitalists. The Hari (peasant) who labours for the produce gets a bare maintenance and in a bad season not even that, with the result that he is never out of debt. The land is cultivated on the Batai or Lapo system. Under the former system, after meeting the cultivation expenses, the produce is divided between the Zamindar and the Hari in certain proportions, depending on the flow or the lift irrigation, and on the number of bullocks brought in by each party. Under the latter system the Hari takes the contract, undertaking to pay a certain rent according to the quality of the land. The big Zamindar, who, in the majority of cases, is easy going, does not strive to make his large holding yield to its full capacity by adopting improved methods. The procuring of manure, cattle and implements, and in some cases even the seed is generally left to the resourceless and extremely conservative Hari, resulting in poor yield. It is admitted that the Hari gets his fair share of the produce, but whereas the Landlord gets a competency by gathering a quota from a large number of Haris, the peasant gets more and more involved in debt, and suddenly leaves in despair to serve another Landlord, and it is then no easy task to effect any recoveries from him. Lands cultivated by small land-holders with the help of Haris, as a rule give better results, as the peasant proprietor works with the Haris and attends to every item personally.

It is extremely desirable to restore the peasant to his legitimate position in the domain of agriculture, and to give him a permanent interest in the land. We have the example of Denmark, where small holdings, intensive culture, and co-operation have in a few decades raised the country from the poorest to a most flourishing condition.

Dr. Mann, D.SC., in a lecture delivered at Hyderabad, Sind, on the 2nd April 1925, which was reproduced in the *Daily Gazette* of 13th April, 1925, gave a note of warning that unless the people of Sind look ahead and prepare themselves for the new era opened by the Lloyd Barrage, the results would be similar to those of the Punjab, as detailed by Mr. M. Darling in his recent book "The Punjab Peasant in Prosperity and Debt". Punjab is depicted as a wealthier Province after the improvement of its irrigation system, but a degraded one, in which the wealth remains in the hands of a few to be squandered away after luxuries, leaving the peasant to eke out a miserable living as before, without that sturdy manhood and independence, so essential for the prosperity of the land. Sind should make preparations ahead, by bringing in more intelligent class of people into agriculture, and by making the present peasant happier and more independent. He advocated Peasant-Proprietors in lieu of absentee Landlords. In England all the improvements were effected by well educated Landlords living on their lands. He recommended Co-operative Farming as a practical means for the improvement of agriculture.

The Sind Branch of the Co-operative Institute has, in consultation with the Registrar's Department, been trying to secure the above object. In an address presented to H. E. the Governor of Bombay in December 1924 a request was made for the reservation of a percentage of the new lands for the Co-operative Farming Societies, to which His Excellency gave an encouraging and sympathetic reply.

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* With acknowledgments to the Karachi *Daily Gazette.*

In the scheme under contemplation a registered Co-operative Society shall consist either of selected peasants and small landholders of the right type, or of educated youths who are at present hankering after clerical posts. Both would be given practical training in the modern methods of agriculture at the Government Farms in Sind. The Society will occupy the position of a Zamindar, and portion out the land acquired by it amongst its members according to their respective qualifications, based on the share capital, the labour and cattle that each brings in in the Society. Limitations will be put on the share capital and the holding of each member to prevent Capitalism. Each member shall occupy the same position in a Farming Society as the member of a Housing Society does as a Tenant-co-partner. The Society will be responsible to the Government for payment of occupancy value, the land Revenue and other assessments. In the internal management of the Society, a uniform system of cultivation will be adopted as far as practicable under the advice of an agricultural expert. Seed manure and implements shall be purchased, and the produce disposed of collectively. Even the purchase of articles of daily use like the foodstuff, clothing and oil-cake will be done co-operatively. The general amenities, such for instance as the provision of select bulls for breeding, of schools for children, a garden for vegetables shall be undertaken by a union.

In advocating the conversion of the right type of Haris into small landholders, this Institute does not overlook the extreme scarcity of local labour in Sind. The Hari will continue to give his labour to the land, but instead of working as a mere tenant or a partner for the season, he would work as a peasant proprietor with abiding interest in the land. The difficulty of labour must be overcome by the use of labour-saving machinery. It is for the experts to determine, whether or not it would be cheaper to work with machinery, than with labour imported from other Provinces.

The Director of Agriculture has been addressed on the subject of opening classes for the practical training of agriculture on the Government Farms in Sind. He is in favour of giving such a training, and has probably made out a workable scheme, which if sanctioned by the Government, would soon come into effect. It is extremely desirable that Government should place a reasonable amount at the disposal of the Agricultural Department for meeting the training expenses and granting suitable scholarships for the maintenance of the pupils. In a purely agricultural province it appears necessary to teach the first principles of agriculture in all the Local Fund Schools. Any additional grant under this head would be most welcome for raising the general standard of agriculture. After receiving the practical training, and pending the acquisition of land, the trained men would be employed in Co-operative Farming under an expert, on lands taken on contract from the Manager of Encumbered Estates.

As regards the financing, it is proposed that each Hari should pay Rs. 200 towards the share capital by instalments from his earnings, and each educated man at least Rs. 1,000 either in a lump sum or by instalments. The remaining purchase money may either be paid to the Government within 5 years from the date of first cultivation, or borrowed from a Zamindari Bank to be started in Sind, on the mortgage of the purchased land.

Presuming that the new lands for the Co-operative Farming Societies would be available at Rs. 15 to 25 per acre, each peasant member will get 24 to 40 acres, and each educated member from 80 to 130 acres, which areas cultivated on approved methods should be ample to yield a decent living. It is estimated that it would be possible to pay up the entire purchase money of the land within 3 years from the commencement of cultivation.

It is not the object of the Co-operative Institute to tamper with the vested rights of the existing Zamindars, or to come in the way of their acquiring more lands in the Barrage areas. The object is to improve the status of the peasant and to raise the general standard of agriculture through co-operation.

The *Times* in the course of a leader on the suspension of the Cotton Excise Duty says that it closes a disagreeable chapter in the history of the economic relations of Great Britain and the Indian Empire, but the most important fact is that the action taken by the Government of India is with full approval of the British Cabinet and it must convince many doubting Indian Nationalists that Delhi and Whitehall regard the necessity of co-operation as reciprocal. But if Lancashire has no moral and political right to oppose the impending abolition of the excise, she has an undoubted right to call on the Government of India and Bombay mill-owners to do their utmost. The "*Times*" also draws attention to Japanese competition and 'Sweating' on a gigantic scale in Japanese mills against which it demands some form of action.

Economics in the West.

Amalgamation of the Note Issues.

London, October 1st, 1925.—Five months ago Mr. Churchill crossed the Rubicon, and for five months this country has been in effect on a gold standard. That fact alone, its causes and effects, have been discussed to the point where further participation becomes reiteration. Several questions however remain outstanding. There is, for example, the matter of the retention of the embargo on foreign loans ; the possibility that at some future time notes will become convertible into gold coin for internal use ; and last, but of great immediate importance, the question of the amalgamation of the Bank of England and the currency note issues.

Two Committees have reported on this subject. The Cunliffe Committee, in its interim report, published in 1918, recommended that the note issue in England and Wales should be entirely in the hands of the Bank of England but that the two existing issues, currency notes and Bank notes, should not be combined until the benefit of at least a year's experience of satisfactory working of the exchanges with a normal minimum gold reserve of £150 millions had been obtained. It should be mentioned that £150 millions was the minimum amount of gold which in all the circumstances the Committee felt to be adequate as a central reserve. The Committee on the Currency and Bank of England Note Issues,' which reported in February of this year, upheld the recommendations on this point of the Cunliffe Committee and they have since been adopted by the Government.

How far have the conditions been fulfilled ? The Bank of England now holds gold to the extent of £160 millions, so that a fair margin exists for possible exports under pressure of sterling depreciation. The exchanges have worked so far satisfactorily, if by that term is meant the absence of any continued large-scale movement of gold either inwards or outwards. Provided this situation persists therefore the amalgamation of note issues might take place some time next year, if it has been found possible to set up the necessary organization and provide the required machinery.

It becomes a matter of some importance, therefore, to consider the principal changes which must be effected in existing legislation in order to carry out the transfer. Three Acts may be mentioned in particular, the Bank Charter Act of 1844, the hundred-year-old Act of 1826, and the Currency and Bank Notes Act of 1914.

The first change arises in connection with the fiduciary issue. This was fixed under the Bank Charter Act at £14,000,000, but has grown through the absorption of private note issues until to-day it stands at £19,750,000. There are now no more private issues in England and Wales to contribute to any further expansion of the fiduciary issue. Clearly therefore, if the circulation of currency notes, which is for the greater part fiduciary, is to be taken over by the Bank, this provision of the Bank Charter Act must be materially altered.

Suggestions have been made from time to time that the basis of note issue in this country should be changed from the fixed fiduciary issue to some more elastic system, such for instance as a percentage gold reserve, the balance of the notes outstanding being covered by commercial paper. It may safely be assumed, however, in view of the careful consideration given to the matter by the Cunliffe Committee, whose decision was supported by the Committee on Note Issues, that the principle of the fixed fiduciary issue will be retained. What the extent of the fiduciary circulation will be is another matter. The Cunliffe Committee found it impossible to name a figure in the then existing circumstances, and recommended that this question should also be reconsidered in the light of a year's experience with a gold reserve of £150 millions and with a satisfactory exchange position. Consequently the problem has yet to be faced, though it may be tentatively suggested that the figure will be somewhere above £250 millions.

One of the recommendations of the Cunliffe Committee in connection with the fiduciary issue is frequently overlooked. It will be recalled that under the Bank Charter Act the amount of the issue of notes against securities was absolutely rigid. It could not fluctuate to meet any emergency. Consequently, when in times of crisis and excessive demand for currency the Bank could not supply the needs of the community under the terms of its charter, the Government of the day gave authority to the Bank to exceed its fiduciary limit, promising subsequently to apply to Parliament for the indemnification of the Bank. This was the procedure on occasions of financial crisis

in the nineteenth century and was the means resorted to at the outbreak of the war. The Currency and Bank Notes Act of August 6, 1914, however, provides for an excess issue of Bank of England notes on the sole authority of a letter from the Chancellor of the Exchequer.

The relevant part of the Act, section 3, reads as follows :—

"The governor and company of the Bank of England . . . . may, so far as temporarily authorized by the Treasury and subject to any conditions attached to that authority, issue notes in excess of any limit fixed by law ; and those persons are hereby indemnified, freed, and discharged from any liability, penal or civil, in respect of any issue of notes beyond the amount fixed by law which has been made by them since the first day of August, nineteen hundred and fourteen, in pursuance of any authority of the Treasury or of any letter from the Chancellor of the Exchequer, and any proceedings taken to enforce any such liability shall be void."

The Cunliffe Committee recommended the continuance of this provision as a permanent feature of our currency system, but the Committee on Note Issues did not repeat the recommendation. The 1914 Act, therefore, while calling in the main for repeal when notes are no longer to be issued by the Treasury, may be left in force so far as section 3 is concerned. Should this be the case the provision for excess fiduciary issue will be only slightly more liberal than the arrangement resorted to before the war, and the currency system will, in fact, be no more elastic.

Another legislative change must be made in connection with the denomination of notes. Under the Act of 1826 the issue of Bank notes below £5 was prohibited, and this prohibition has held good for the ensuing 99 years. Clearly, if the Bank of England is to take over the issue of £1 and 10*s*. notes hitherto circulated under the authority of the Treasury, the law will have to be altered to permit the Bank to lower the denomination of its notes.

The Bank of England return and the Currency Notes Balance Sheet for September 30, 1925, follow :—

Bank of England.

ISSUE DEPARTMENT.

	£		£
Notes Issued ..	178,391,230	Government Debt	11,015,100
		Other Securities ..	8,734,900
		Gold Coin and Bullion ..	158,641,230
		Silver Bullion ..	—
	178,391,230		178,391,230

BANKING DEPARTMENT.

	£		£
Proprietors' Capital	14,553,000	Government Securities	36,772,772
Rest	3,732,257	Other Securities ..	75,576,311
Public Deposits	27,109,807	Notes	33,616,665
Other Deposits	102,390,781	Gold and Silver Coin	1,825,483
7 Day and Other Bills	5,386		
	147,791,231		147,791,231

Currency Notes Balance Sheet.

	£		£
Notes outstanding	273,128,322	Currency Note Redemption Account—	
Certificates outstanding ..	18,550,000	Bank of England Notes	56,250,000
Notes called in but not yet cancelled	1,325,849	Gold Coin and Bullion	—
		Silver Coin ..	7,000,000
		Government Securities	242,187,932
Investments Reserve Account ..	12,554,718	Balance at the Bank of England	120,957
	305,558,889		305,558,889

Assuming no change is made in the method of presenting the return and that the two accounts are amalgamated, the following statement would show the position of the Bank of England as on September 30 last :—

Consolidated Statement.

(Bank of England Return and Currency Notes Balance Sheet)

ISSUE DEPARTMENT.

	£		£
Notes Issued ..	415,024,444	Government Debt	247,648,314
		Other Securities ..	8,734,900
		Gold Coin & Bullion	158,641,230
		Silver Bullion ..	—
	415,024,444		415,024,444

BANKING DEPARTMENT.

	£		£
Proprietors' Capital	14,553,000	Government Securities	36,772,772
Rest	3,732,257	Other Securities ..	75,576,311
Public Deposits	26,988,850	Notes	33,495,708
Other Deposits	102,390,781	Gold & Silver Coin	1,825,483
7 Day and Other Bills	5,386		
	147,670,274		147,670,274

The first step in arriving at the figure of "notes issued" is to add to that item in the original return the currency notes and certificates outstanding and the notes called in but not yet cancelled, and to deduct the Bank notes in the Currency Note Redemption Account. In order to obtain the figure of "government debt", the investments reserve account is first deducted from government securities in the Currency Note Redemption

Account, the balance being added to government debt in the Issue Department. Two items in the Currency Note Redemption Account now remain to be disposed of. Silver coin cannot be held by the Bank in the Issue Department, and it is unlikely that the Bank would be willing to hold it as part of the reserve in the Banking Department. Consequently it is probable that the Government will withdraw the silver and hand over in its stead an additional £7,000,000 of government securities, raising the total of the "government debt" to the figure stated. The balance at the Bank of England would be paid in notes from the reserve in the Banking Department, which, together with the Bank notes already held as security for currency notes, would be returned to the Issue Department leaving the figure of "notes issued" at the total shown.

From the consolidated return it will be seen that the fiduciary issue, if the currency notes and Bank of England notes were combined at this juncture, would amount to £256 millions, with notes in the Banking Department of £33 millions. The ratio of reserve to combined deposits would be practically unchanged at 27.3, while the ratio of gold to combined note and deposit liabilities would be reduced from 58.5 to 31.4 per cent.

What is perhaps more important, however, is to consider the changes in the monetary machinery as it exists to-day. As far as surface changes go, the currency note will gradually disappear, and Bank of England notes for £1 and 10*s*. will take their place. What is the theory underlying the change of which this is the public evidence? It is a well-known historical fact that during the last century currency, including notes, has come to play an ever dwindling part in the conduct of affairs in this country. Indeed, to such an extent have cheques and bills ousted currency that it is doubtful whether one per cent of the debts falling due in business life to-day are settled by the handing over of currency. Consequently credit has come to be the controller of currency. It is argued therefore that inasmuch as the Bank of England exercises control over the volume of credit outstanding by virtue of its position as depository of the cash reserves of the banks, to the Bank of England alone, in the interests of economy and efficiency, should also be given the function of issuing notes, which comprise so large a part of the currency circulation. The abolition of the currency note is regarded as the removal of the fifth wheel of the monetary coach, in view of the Treasury Minute prescribing a maximum for the fiduciary issue of currency notes.

With the consolidation of the note issue, the fiduciary circulation will presumably be fixed, subject only to section 3 of the Currency and Bank Notes Act, 1914, assuming this provision be continued. Consequently the issue of notes and volume of credit will be dependent, as before the war, upon gold movements. Nevertheless, the monetary system of this country will be somewhat different. It will be a true gold standard, as in 1914, with the modification that gold will not be in circulation. Instead Bank of England notes for £1 and 10*s*. will pass from hand to hand. The Gold Standard Act, 1925, carrying out the recommendation of the Committee on Note Issues, relieved the Bank of England from paying out gold coin, as distinct from bars, in exchange for notes, and rendered the currency notes likewise non-convertible into coin. This relief to the Bank will continue until abolished by proclamation, but it seems fairly clear that the Committee on Note Issues contemplated that it should be only temporary in character. Consequently when conditions warrant it may be that gold coin will again become available for public use in this country. Even then, however, it is doubtful whether any large amounts would be drawn for circulation. The note, by reason of convenience, has become firmly entrenched in the habits of the people, and it would probably be found that individual preferences for gold coin would show themselves in the circulation of only very limited sums.

It is always a problem whether an emergency situation should be used as an opportunity for reorganization and experimentation or whether it should be regarded as a completely disastrous position, to be got out of lock, stock and barrel at the earliest possible moment. When the gold standard was abandoned it was generally regarded as desirable to restore it without any unnecessary delay. As time wore on however and business life became accustomed to new conditions, various plans were put forward for what amounted in some cases to a complete replacement of the old system by something supposedly better. It has now been decided that the emergency was nothing more than an emergency. Imagination has fallen to a discount, and the old system apparently is to be restored in its entirety. On the whole the change is welcomed, but mingled with the Te Deum will for long be heard the voice of the reformers bewailing a lost opportunity.

American Conditions and Gold Possibilities.

The scope of movements in trade and banking statistics in the United States must always be discounted somewhat to allow for the vast dimensions of the country and its business activities. Nevertheless the expansion in the volume of credit over the past three years is so phenomenal as to attract attention even when all such allowances are made. In June 1922 the deposits of all incorporated banks amounted to nearly $32,000 millions, but by April of this year they had increased to $39,000 millions, indicating a total credit expansion of roughly £1,400 millions, 22 per cent, or seven-eighths of the total deposits of the London Clearing banks. Half of this increase took place during the third year.

Prices on the other hand followed an irregular course. Without any very definite trend the wholesale price index numbers of the Federal Reserve Board and the Bureau of Labour both fell to their lowest point in June 1924, since when there has been a substantial rise amounting to 6½ per cent and 10 per cent respectively. It is clear, therefore, that the expansion of credit and the movement of prices have not been closely related during the three year period, and that some other influence has been at work. When indices of the volume of trade are consulted it is found that a marked growth in trade has taken place, particularly in the twelve months to June last. The Federal Reserve Board's index number of mineral production was nearly 13 per cent and of manufacturing production over 27 per cent higher, though that of agricultural movements was lower. The index of production in basic industries was 17 per cent higher. The figures of both wholesale and retail trade showed increases, while building contracts were up by 37 per cent. It is clear, therefore, that the rise in prices and expansion of credit have been accompanied by a large growth in business activity.

It may be assumed that the bulk of the increased output of commodities is being consumed at home. Nevertheless, as the growth proceeds it must of necessity become more and more important to extend the scope of foreign trade. Even in the present year a considerable expansion has taken place, exports for the first eight months being $3,086 millions as compared with $2,697 millions in the corresponding period of last year, and imports showing a rise of $382 millions to $2,767 millions.

The problem of further expansion of exports however lies, as it has hitherto, in the inability of would-be customers to buy. The dollar is considerably overvalued, for example, in terms of French currency, with the consequence that France and other countries cannot afford to purchase all the American goods they could consume if those goods could be purchased at a favourable price in the local currency. In order, therefore, to promote foreign trade, particularly in view of the high protective tariff, the United States will find it more and more desirable to extend loans to foreign countries, and when settlements are arrived at in connection with the various debt legacies of the war it may be expected that America will lend abroad on a scale hitherto unapproached under peace-time conditions.

What will be the internal effect of these loans? Plainly they will tend to increase the volume of credit in the United States. But a time will come when, productive capacity being limited, the output of commodities cannot keep peace with the expansion in purchasing power. How near that point American industry already stands it is impossible to say, but the nearer it moves to that point the greater will be the impetus to a rising price level. Competition between home and foreign consumers for the available products of industry will become keener, and prices must necessarily be forced up. Already, as has been stated, the price level is substantially higher than a year ago, and it would appear not improbable that before long the upward tendency may become accentuated.

The possibility has an important bearing on the subjects of future gold movements and the banking situation in this country. As prices rise in America, assuming relative stability in this and other gold standard countries, dollars will tend to cheapen in terms of sterling, among other currencies. The exchange will tend to move towards the American gold export point, ultimately that line will be crossed and gold will flow out. Under ordinary conditions such a situation would call for measures to adjust the exchange to check the outflow. But it must be remembered that the United States have a large gold stock in excess of what legal provisions and customary ideas of safety demand as a basis for the credit structure. Inasmuch then as the gold is an unproductive asset, an outflow on a considerable scale, continued for a period of time, will not be looked on as a movement carrying with it any serious danger. So far from being

regarded as the symptom of a critical domestic position it will within limits be hailed as a profitable means of dealing with a hitherto non-earning asset of little practical utility.

Already, in the first eight months of this year $142 millions of gold has been exported on balance. Such a sum would before the war have represented a serious loss, but much larger quantities can under present circumstances be sent out of America without so much as a single hair turning on the heads of the members of the Federal Reserve Board.

In addition to the outflow from America, the world's new production of gold has somewhere to find a home. Something like £80 millions per annum must be absorbed by the world's gold reserves, hoards and luxury industries, without allowing for any increase in the Canadian or other output. To what countries the total free gold on both accounts will be directed is an interesting speculation.

The question whether India in any particular year will absorb gold on a large scale is always to some extent dependent on the vagaries of the monsoon, but over a period of years nothing less than a radical change in the habits of the natives can check or reverse the steady inflow of precious metals. This remark applies to a smaller but important extent to other parts of the Far East. This then will be one demand element in the gold situation. Consumption in the arts and in industries of one sort or another comprises another important factor. But these two together, even when coupled with the demand for gold reserves on which to base restored European currencies, will probably be inadequate to cope with the future supplies from natural mines and American cellars. Consequently it would appear likely that over the next few years this country will be required to absorb into the metallic reserves substantial quantities of gold. To put a figure upon the amounts would be nothing more than to make a worthless guess, but it appears fairly clear that they will be fully capable of supporting a growing volume of credit to finance any likely development of trade and industry in this country. Should they be more than adequate for this purpose the prospects are for a slowly rising price level, a state of affairs which holds out a distinct hope of prosperity in the future.

Industrial Notes from U. S. A.

New York, October 1st, 1925.—The Fall season has opened very favorably. During September the trend of business in general served to establish additional confidence and to strengthen the opinion that a large volume of trade will be handled through the remaining months of this year.

The intelligent way in which buyers have planned for their needs, and the expeditious manner in which manufacturers are filling these needs through careful production schedules in our basic industries, together with the railroads' ability to move goods promptly have largely helped to create the feeling of confidence which has featured business in this country so far in 1925. The continued absence of the speculative spirit in the goods markets is most encouraging, in viewing both the commercial and the credit situations.

Wholesale and retail trade are excellent. Mail order houses, chain stores and the large department stores are benefiting by the increased consumer purchasing power, which is a reflection of the industrial activity and satisfactory agricultural situation.

There has been a wide range in the rate for call money during the month—3½ to 6 per cent. So low a rate as 3½ per cent had not been touched for two months and was due to the temporary large supply of funds with very light demand for accommodation. The high rate of 6 per cent, the highest figure recorded, with one exception, since late in 1923, was the result of heavy withdrawals from New York by interior institutions, limited offerings and extensive calling of loans. Neither extreme was long maintained, but it may be said that a stiffening in the call rate was apparent during September. Time loans have ranged between 4¼ and 4¾ per cent.

Stocks on the New York exchange have been sensitive to the money market, prices being irregular and the active list, as a whole, indicating no definite tendency. However, certain individual stocks and groups recorded new highs during the month in spite of the sharp reactions on certain days from the upward trend. Prices are being driven back and forth throughout the list, suffering slight net losses during the closing days of the month. Trading has been active. Among the important new bond offerings are $29,700,000, 6 per cent Argentine Government and $10,000,000 State of Bremen, Germany, in

the foreign field and $17,500,000 debentures of Marshall, Field & Co., Inc., representing the first public financing done for this concern in the sixty years of its existence. The market has shown more activity than last month.

August proved to be the turning point for iron and steel and the industry is now operating at about 75 per cent. Production of steel ingots for July was the smallest since September, 1924, the total being 3,087,590. The August total was 3,424,034 tons. There was a reduction of only 26,664 tons in the Steel Corporation's unfilled orders at the close of August. There has been an increasing demand for steel products in the past thirty days with buyers showing more disposition to provide against expected requirements as well as immediate needs. Prices have been steady.

While the loading of revenue freight dropped below the million car mark for the last week reported, 35,627,852 cars have been loaded since the first of the year as compared with 33,537,142 in the same period of 1924 and 35,144,935 in 1923—a gain of 6.2 per cent and 1.3 per cent respectively. A net operating income of one billion dollars is predicted for the railroads this year.

Automobile production is at a higher rate than ordinarily at this season. Several large producers are at capacity with backlogs and others are near capacity, while the remainder appear to be working on declining schedules. Competition is still very keen, but price-cutting seems to have run its course for the present.

Cotton prices have fluctuated within a broad range with prices inclined upward previous to the release of the Government crop estimate for the United States of 13,931,000 bales, based on conditions as of September 16. This compared with 13,740,000 bales, an increase of 191,000 bales over the September 1 official figures. The condition of the crop was 53.8 per cent of normal, indicating a yield per acre of about 143.5 pounds. The final yield last year was 157.4 pounds per acre. The market witnessed a sharp decline upon learning of this increased promise of production, it being somewhat above general trade expectations and prices have since declined. Grain prices have been decidedly downward.

September has witnessed a broadening of activity in cotton textiles and there is prospect of further general improvement. Production is increasing except in certain sections still handicapped by low water. In general, mills are in a better position than for some months.

Healthy business conditions exist and the outlook is encouraging.

Indian Economic Notes.

Cultivation of Groundnut.

There are comparatively few people who realize the world-wide importance of the humble groundnut, or "monkey-nut" as it is commonly called. It is cultivated in almost all the warmer countries of the world, especially India, China, West Africa and the United States, and apart from the huge quantities that are consumed in these countries, no less than 800,000 tons are exported to Europe alone. The nuts are largely eaten either in the raw state or roasted, but by far the greater quantity are used as a source of oil. For a great many years Marseilles has been the chief centre in Europe for the production of groundnut oil, but considerable quantities are now prepared in Great Britain, where the industry was started during the war. China also produces a very large quantity of the oil. Groundnut oil is used for a variety of purposes. It is largely employed as a salad oil in place of olive oil, and in the manufacture of margarine and other edible fats. It also finds a use as an illuminant and lubricant, whilst the lower qualities are employed for soap-making. The cake left after the oil has been expressed from the nuts forms a valuable feeding-stuff for cattle and other farm animals. The current issue of the quarterly "Bulletin of the Imperial Institute" (John Murray, price 3*s.* 6*d.*) contains a detailed article on the cultivation and utilization of the groundnut. It gives particulars of value to the producer regarding methods of growing the plant and harvesting and marketing the crop, as well as information on the preparation and uses of the oil. An interesting account is given of the position of groundnut cultivation within the British Empire. This shows that in addition to India, the Gambia and Nigeria, where the crop is already largely grown for export, many other parts of the Empire are suitable for its production on a large scale. The present contributions from the latter, however, are relatively small, although Tanganyika, the Sudan, and Kenya

show a steady increase in exports in recent years.

Iron in India.

It appears from the records of the Geological Survey of India, just issued, that the production of iron-ore increased by 76 per cent, namely, from 821,053 tons in 1923 to 1,445,313 tons in 1924. The production—996,920 tons, recorded for Mayurbhanj State represents the production by the Tata Iron and Steel Company, whilst of that recorded against Singhbhum 138,939 tons were produced by the Indian Iron and Steel Company and the balance by the Bengal Iron Company. The large increase in the production of iron-ore by the Tata Iron and Steel Company in Mayurbhanj State is reflected in the figures of production at Jamshedpur, where the output increased from 392,135 tons of pig-iron in 1923 to 540,140 tons in 1924 ; the production of ferro-manganese rose from 3,506 tons in 1923 to 8,951 tons in 1924 ; the production of steel including rails rose from 151,097 tons in 1923 to 218,472 tons in 1924. The production of the Bengal Iron Company rose from 119,669 tons of pig-iron in 1923 to 147,733 tons in 1924 ; but the production of iron castings fell from 41,849 tons in 1923 to 27,045 tons in 1924. The production of the Indian Iron and Steel Company rose from 77,980 tons of pig-iron in 1923 to 168,249 tons in 1924. No ferro-manganese was produced by either the Bengal Iron Company or the Indian Iron and Steel Company. The production of pig-iron at the Mysore Iron Works at Bhadravati rose from 9,732 tons in 1923 the initial year of production, to 16,425 tons in 1924. The total production of pig-iron in India rose, therefore, from 599,516 tons in 1923 to 872,547 tons in 1924. A portion of this output was, of course, utilized in the production of steel at Jamshedpur, but a large portion was exported ; an export market for Indian pig-iron is, indeed, necessary for the continued success of the industry, in view of the fact that the total blast-furnace capacity of the country is much in excess of the steel-melting capacity and the internal requirements of India for iron castings. It is of interest, therefore, to record the data relating to pig-iron exports from India during the years 1923-24 and 1924-25. The exports in 1924-25 were 86 per cent above those of the previous year, but the export value fell slightly from Rs. 69.8 (£4.65) per ton to Rs. 63.5 (£4.57) per ton. In spite of this increased production of pig-iron and steel, the years 1923 and 1924 were not prosperous ones for the Indian iron and steel industry owing to a world-wide slump in the iron and steel trade. For this reason the conditions of the industry were investigated by the Indian Tariff Board and a measure of protection introduced for steel in 1924. As already recorded the pig-iron section of the industry found an outlet for increased production in increased exports. The prices at which it has proved possible to land cargoes of Indian pig-iron at United States ports have led to complaints from American producers and antidumping notices are said to have been issued against certain cargoes of Indian pig. In the Central Provinces the number of indigenous furnaces in operation rose from 119 in 1923 to 229 in 1924. The output of iron-ore in Burma is by the Burma Corporation, for use as a flux for lead smelting.

Protection for Coal.

The Indian Mining Federation are placing before the Tariff Board the following proposals, when the Board consider protection for the coal trade :—(1) That a protective duty of Rs. 5 a ton be imposed on Natal and Transvaal coal imported into India, the duty to increase correspondingly with additional indirect bounty granted to the South African export coal ; (2) that a protective duty of Rs. 10 a ton be imposed on all other coal imported into India ; (3) that these duties be in force for a period of five years at the end of which the question of their repeal or continuance be examined in the light of the position then confronted by the Indian coal trade ; (4) that an additional duty be imposed on the mineral oil imported into India and generally used as fuel for industrial purposes at the rate of ½ anna per gallon, the proceeds of the duty being ear-marked for the purpose indicated below ; (5) that the Board do record a further recommendation for grant of a bounty at the rate of Rs. 3 per ton on Indian coal exported to any foreign port, the funds for the payment of the bounty being found from the proceeds of the duty suggested under proposal (4) above ; (6) that the proposed bounty be paid for a period of four years. The only issue in this important question is to get down to elementary facts and find why protection is necessary. Collieries were never developed to their full extent as the railways were unable to carry the coal offered. When war broke out a demand for coal was created, raisings were increased and in spite of government controlling coal, prices were workable. Development took place, and there was every opportunity

of the coal-trade being carried on satisfactorily. Unfortunately the Member for Commerce had two distinct responsibilities to shoulder, one the coal-trade and the other the railways. If he permitted the price of coal to rise he threw an extra burden on the railways as they were the largest purchasers of coal. It is hardly necessary to recapitulate the policy adopted, except to mention the main factor that that policy permitted bounty-fed African coal to get into the Indian markets, which acted as the lever of his policy in keeping down prices for the benefit of the railways. This affected the coal-trade in two ways. Not only did it keep the price of coal down but it restricted raising which made the cost at the pit-head greater. It further stopped coal going to foreign markets. If the railways had to buy dear fuel it affected the Government of India budget. This had to be weighed against the loss the coal-trade would suffer. With the coal-trade the Hon'ble Member had to deal with a body of men who had not learnt to combine for trade purposes. It was much easier for the Hon'ble Member to hood-wink the coal-trade than the Government of India. He therefore got cheap fuel for his railways and has left the coal-trade in a position, after having cut its prices to the lowest, of not being able to compete against African coal in price. It is on this point the coal-trade must convince the Tariff Board.

Age Limits for Backward Classes.

In 1923, on the recommendation of the Advisory Committee, the Government of Bombay decided that the age limit for students entering the College of Engineering, Poona, should be fixed at not more than 22 years at the date of admission. It has however been found that students belonging to the Muhammadan and Hindu Backward classes have been prejudiced by this restriction, the chief reason for which was that after a certain age students will not take kindly to manual work. This does not apply to these classes. The Government have therefore directed that the age restriction should be abrogated in the case of students belonging to the Muhammadan and Hindu Backward classes.

How to Run a Successful Business.

A demonstration, how to run a successful business with a very small capital from articles generally wasted, was recently arranged in the Calcutta Corporation's Tennis ground, by the authorities of the Government Weaving Institute, Serampore. From wild and Malabari silk waste, by employing the improved Charka as used by the Weaving Institute, it was shown that a man could easily earn more than a rupee a day. At present this silk-waste is being exported to foreign countries to be made into finished goods which we in return buy at enormous cost, thus sending out a large sum of money which we could easily retain within the country. The method is very simple and the capital required is very small; similarly from con and hemp it was demonstrated home-industries, on a small scale, fetching a considerable sum of money were possible.

Remedy for Unemployment.

After an exhaustive survey of the unemployment problem the International Labour Office have arrived at the following conclusion: "There is no panacea for unemployment. Its origins are many, and it can be effectively checked only by a variety of methods. One of these, however, is stabilization of the price level, a proposal which may reasonably be expected to enter the realm of practical politics. The prevention of unemployment demands, in brief, a policy of international co-operation to secure better organization of production and exchange, such a policy involving, as a primary step, that of securing stability in the value of all media of exchange." It will thus be seen that stability in the markets of all countries is a potent factor in the unemployment problem, together with a better system of organized production. This is a valuable hint for our social reformers.

Good News for Bikánir.

Experiments have been made for many years with coal dust as fuel,—the dust being projected by a current of air through a nozzle, and thereafter ignited so as to produce a great tongue of flame. The Germans now claim to have perfected the burning of the dust of lignite—partially formed, or "young" coal—of which large supplies exist in Central Germany. According to the current issue of *Lloyds List* ship-builders and ship-owners are showing great interest in this new fuel. The bunkering of coal dust takes about the same time as oil, and with the aid of the pumping process now used, a ship can be bunkered in five hours, whereas it would take two days with ordinary coal, it is stated. Experiments, it is added, show that whereas the caloric value of lignite has hitherto only been 60 per cent of that of pit coal, this figure will be raised by the new process of using lignite in the form of

dust to 87 per cent. There seems no reason why lignite dust should not be used also in the furnace of the locomotive. This should be good news to Bikanir who happily possesses lignite mines of some magnitude. Hitherto the burning of lignite in the same way as coal has not been very successful, the ash and waste being so great relatively to the heat generated. But things may now change, and lignite dust prove cheaper than oil fuel.

Separate University for Gujarat.

The establishment of a separate university for Gujarat was urged in a public meeting held recently at Ahmedabad. It was pointed out that Gujarat was in every way ready for a separate university. It would supply the necessary funds as well as capable men to administer the affairs of the University. Government should therefore give a separate university to Gujarat on the same conditions and at the same time when such a university was given to Maharashtra.

Diamonds in Central India.

The output of diamonds in Central India during 1923 amounted to 115 carats, valued at £3,100 as against 171 carats, valued at £6,110, in the previous year. Rubies to the amount of 92,592 carats, valued at £44,204, and sapphires to the amount of 65,692 carats, valued at £3,947, were produced in Burma in 1923, the output of the former gems showing a slight decrease and that of sapphires a drop of about one-half as compared with 1922. Exports of gems from India last year were valued at only Rs. 22,165 as against Rs. 19,54,262 in 1923. In 1922, however, only Rs. 29,975 worth was exported.

Tata Power Company.

The Railway Finance Committee has agreed to Mr. Jamnadas Mehta's proposal that the question for giving a loan of Rs. 1 crore to Tata Power Companies be further considered and that the question of constructing a power station by Government be postponed for six months. Sir Basil Blackett objected on the principle the Government of India were not prepared to put money into a private company, such as the Tata Power Company, in the manner suggested. The Tata Company had during the last nine months approached both the Government of India and the Railway Board for a loan of Rs. 1 crore, not for the purpose of financing the extensions needed to enable them to supply additional power required for the electrification of the line from Kalyan to Poona, but in order to enable them to complete the works necessary for supplying power already contracted for by them for the suburban lines. The company were short by a crore of the finances needed for their existing contracts. They had hitherto declared their inability to supply power to electrify the line from Kalyan to Poona in any case, and it was not until the last meeting of the Railway Finance Committee that they suggested that they could supply this power. The position up to that date was that they were short by a crore of the finances needed to fulfil their existing contract, and their request for a loan of Rs. 1 crore for this purpose had been refused, and this seemed to be a particularly inopportune moment for the company to ask for a contract to supply additional power, seeing that they had already contracted to supply more power than their existing finances enabled them to implement. It was not in the Finance Member's view the question of saving an industry from failure but simply a question of Government being asked to enable a particular company to obtain from Government capital needed to finance its contractual obligations on something better than the market terms. This Government were not prepared to do in any circumstances. However, Mr. Mehta's motion was agreed to. For the three months ending September 30, 1925, the revenue of the Tata Hydro-Electric Power Supply Company was Rs. 12,15,871, expenditure Rs. 6,60,282, and nett profit Rs. 5,55,589.

Loss from Preventible Disease.

Mr. G. Bransby Williams, Chief Engineer, Public Health Department of Bengal, in an illuminating discourse to the Calcutta Rotary Club propounded that the capitalized value of the annual loss to India on account of preventible disease was Rs. 2,667 crores or £2,000,000,000. We do not know if anybody before him was ever conscious of this astounding fact! Even our popular politicians, who are apparently so zealous of doing good to the people, never put that to us in that way. What was the loss caused by a perverse direction of exchange or any other executive blunder compared to this? Yet we have heard more of those! Mr. Bransby Williams puts the annual death rate in India at 30 per thousand. On the figures of Great Britain, he assumes that if preventible diseases were eliminated the death rate here could not be more than 15 per thousand. The other 15 is the loss that we may prevent but we do not. Just think, 15 per thousand would make 3,750,000 lives

per annum in India. Then there are at least 180 weeks of sickness for every death, so that if 3,750,000 lives could be saved, we could diminish sickness by 675,000,000 weeks in the year. A dismal possibility for Doctors. These weeks could be saved if preventible diseases were prevented. Let us now reduce things to their money value. It has been estimated perhaps rightly, that the average value of a human life in India is Rs. 200 and that the average cost of a week's sickness here is Rs. 2. From this Mr. Bransby Williams works out the grand total of the loss from preventible diseases as follows :—

	Rs.
3,750,000 lives lost at Rs. 200 each	75,00,00,000
675,000,000 weeks of sickness at Rs. 2	135,00,00,000
TOTAL ..	210,00,00,000

Taken in round figures the annual loss comes to Rs. 200 crores or Rs. 8 per head of the whole population. And just think what they do to prevent this drain of which the capitalized value may reasonably be taken as £200 crores. This is good propaganda no doubt and the thesis of Mr. Bransby Williams may be very skilfully used by the Swarajist in his fight for the next election. After these disclosures public health reform may easily be made to constitute a telling factor in electioneering field work. However, there are men who believe that the space they occupy is not more than what they require. Mr. Harry Hobbs pointed out in reply to the discourse that in 1870 the population of India was 250 millions ; to-day it was 331 millions. If a public health scheme was to prevent all preventible diseases then what Mr. Hobbs wanted to know was how many would be living on the dole in fifty years' time through overpopulation. Hopelessly Malthusian !

Court Minutes—A Review.*

By C. Hayavadana Rao, B.A., B.L.

This volume of the *Court Minutes* is of interest mainly for the reason that it carries the accounts of some of the incidents mentioned in the previous one certain stages further. The volume bears evidence of the struggle with the Dutch and incidentally gives us some glimpses of the attempts made to attain through King Charles reparation for the injuries inflicted by them. The state of the Company was, we see, by no means bad, for the accounts showed a surplus—and dividends of 20 per cent and 40 per cent had been declared in 1661 and 1663. Such handsome profits would make the mouths of shareholders water in these days of trade slump and financial distress. The Great Plague of 1665, rampant then in Netherlands, is referred to in the Records of the period under review. The plight of citizens led to a reduction in the quorum required for the meetings of the Court to five and these five, we note, could act on behalf of the whole body. Other references to it are frequent. The East India House was closed and the three Committees met at the private residences of members. When things brightened, the Committees were thanked and they were voted, we are told, a gratuity of £ 100, a special sum being voted for distribution among such of the servants as remained at their posts. The ladies of the families of the Committees also got presents of silks and calicoes. It was during this period that news came that Bombay was handed over by the Portuguese to the King's representatives. This news was brought to London in December 1665. In March following, Sir Gervase Louis sailed in the *Return* to Bombay as Governor, with 20 soldiers as a reinforcement to protect the island against the Dutch. We light on an interesting episode, when we hear that as the result of certain malpractices indulged in by him at the expense of the Company, its Secretary, John Stanyan, was summarily dismissed, his place being taken by Robert Blackborne, a friend of Pepys, the famous Diarist. The Company, we note, in 1666 advanced a loan of £ 50,000 to the King for payment of the wages due to seamen, charging 6 per cent interest therefor. A condition of the loan was that it should not be made a precedent. The loan, we note, was punctually repaid. The Great Fire of September 1666 receives due attention. The records were removed to Stepney for safety. Committee-men sat up in turns all night at

A Calendar of the Court Minutes, etc., of the East India Company, 1664–1667. By Ethel Bruce Sainsbury, with an introduction by Sir William Foster, C.I.E. The Clarendon Press, Oxford. 21*sh.* net.

the East India House to guard against a fresh breaking in of fire ; and buyers of goods from the Company who were financially embarrassed by their losses were shown special consideration. The expenditure caused by the Great Fire is shown in the ledger as £ 749–9–3. The Fire, however, did not interfere with trade. Business as usual was the Company's motto ; the shipping to Surat, Madras and Bantam went on as before. In 1667, no less than five vessels were prepared. This formidable fleet was intended to reduce by force Fort St. George, where Sir Edward Winter was still defying the Company's orders. For this purpose a commission was obtained from His Majesty. The fleets, however, did not sail until towards the end of January 1668 and so falls beyond the period covered by this volume.

Some interesting details may be noted. The position of the Royal Exchequer in November 1667 was such as to induce the idea of the transfer of Bombay to the Company. The Portuguese were trying to buy it back. The Company naturally did not desire to show any eagerness to buy it off from the Crown. Being in want of funds for prosecuting the war, the King opened the negotiations by saying he was ready to listen to any proposals in the matter. The Governor of the Company was cautious in the matter. He did not think that the island was at all useful to the Company, that the Company would not have taken it if the Portuguese had offered it before the Session, and that the expense of keeping it would be great ; and that even if the Company took it, it could not be expected to pay the money already laid on it. The Lords Commissioners then came into the open and suggested a loan of £50,000 at 6 per cent—free of all claims. This was eventually agreed to, the chief reason being that the Company did not desire that the island should go to others, though the belief was also there that the islard could after some time be made to pay its pay. Arrangements were then made by the Attorney-General to prepare letters patent for the transfer of the island to the Company, which actually is beyond the time covered by this volume. This was how the first city of India was acquired by the Company—a truly mercantile method. No wonder Bombay is still commercial in its leanings !

Now a few words for Madras. One of the first entries we have relates appropriately enough to a parson. Under January 20, 1664, we have the following :—Simon Smithes is entertained as Minister for Fort St. George at a salary of £50 per annum and given £10 for fresh provisions. He is also allowed to th value of £20 for such books as he shall give i a list of ; these he is to leave in the Company Library at Madras on his return. So Madra boasted a library at this early period. Th following instructions of the Company to M Simon Smithes, dated January 26, 1664, wi be found extremely interesting. During th voyage, we are told, he is to see to the dail exercise of prayer, both morning and evenin and especially to the due observance of th Sabbath: and to suppress all swearing, drunken ness, and other un-Christian behaviour amon the Ships' Company, that the blessing of th Almighty may accompany him in the voyage On his arrival at the Fort he is to instruct th people 'in the way to Heaven and happiness, and especially to sanctify the Sabbath b preaching and prayer. In Madras he wi find—he is told—several priests and others o the Romish religion, with whom, as opportu nity presents, he is to engage in controversy and dispute ; although he may not so far pre vail 'as to reformation', yet it may help to con firm their own people, and make them constan in the Protestant profession. They doub not that he will observe all this and what els may conduce to the glory of God and promo tion of religion, both by his doctrine and life Their Agent at Madras was Sir Edward Winter the story of whose *coup d'etat*, so well tol by Colonel Love's *Vestiges*, reaches only on stage of its tedious length in this volume This masterful Royalist imprisoned, on th score of uttering sedition, George Foxcroft, Cromwellian, who had come to supercede him Sir Edward's administration of his charge though vigorous to some extent, was faulty in that it sacrificed too often the Company' for his own. Foxcroft would not wink a this and he soon paid the penalty for his strict ness. He found himself imprisoned with hi associates and it was a long time before h gained his liberty. Sir Edward was suspected of the intention of delivering the Fort (For St. George) to the Dutch. He apparentl proved too troublesome. His brother Thoma Winter was sent for by the Court and asked to write to his brother, who assured them tha his brother would not do anything prejudicia to the interests of the Company but woul keep the Fort for them both against the Dutc and the Moors and in that assurance he offere to pay £2,000 for £1,000, if it should prove t the contrary. The Court tried to send out proper man to take over the Fort but for time could not get a suitable one. One Colone Doyley was talked to in the matter but h

wanted £2,000, half at his setting out and the other half on his return, though suggesting that the work is 'below the reward'. The Court gave him up as they could not pay so much. The Company made constant endeavours to get order restored at Fort St. George. They moved His Majesty's Government and after much trouble obtained the Lords Referees' opinion sanctioning the dismissal of Sir Edward "from the Government and command of Fort St. George", his recall home "to attend His Majesty's further pleasure" and that "he and all others concerned deliver up the said Fort and town of Madras, with all the Company's money, estate, etc., to whomsoever they shall appoint to receive the same". The Company was to arrange for the safe return of Sir Edward and Foxcroft was to continue for another year at Madras but be held liable for punishment if on his return home he was "found guilty of any treasonable words or undutiful behaviour towards His Majesty". The Order in Council containing this Report of the Lords Referees is dated March 20, 1667. The actual surrender of Sir Edward and the Fort took place some twenty months later, about December 1668. Sir Edward duly returned to England, obtained, after a long-drawn dispute with the Company, the large sum of £6,000. Being prevented from returning to Madras, he settled down at Battersea, where there is a fine monument to his memory. This part of his career, however, falls beyond the scope of this volume. Sir Edward Winter is a typical specimen of the adventurers of 17th century England. He was even charged with adding "Bart." to his name as it appeared on the Commission alleged to have been issued in his favour by. His Majesty! Sambrooke, one of the Council, went so far as to state that "the word Baronett was interlined above line, and is plainly appeared to bee done with another inke".

Other sidelights on Madras of the period may be briefly noted now. Among the ships trading regularly with the Court was the *Madras Merchant*, other ships of corresponding names being the *Constantinople Merchant*, the *Loyal Merchant*, and the *Assada Merchant*. Masulipatam and one other factory only on the Court were at the time subordinate to Fort St. George.

Turning to contemporary events in India, we have a reference or two to Sivaji, the great Mahratta hero. His attack on Surat is referred to. In one of their letters dated August 11, 1664, the Company refer to "their relation of the rebel Sivaji's proceedings at Surat" and add that "that it is confirmed by the Company's shipping from thence". On September 21, 1664, some Committees are asked to "consider and report what they think should be done for those men who served on shore at Surat when Sivaji assailed the Company's house and ransacked the town". Some of the freemen at Surat who helped in driving off Sivaji were shown special concessions and favours. George Cranmer, for instance, for his "eminent service in defence of the Company's house and estate at Surat against the assaults of Sivaji" was paid a gratuity of £100–15–8. In another (see page 359) Sivaji's attempt is termed an "insurrection".

Among the Company's servants in India of the time, probably, the person who most impressed the Court was Sir George Oxender, the President at Surat (1662—69). He was undoubtedly the ablest of the Company's servants in India. The Court so far appreciated his services that they showed considerable regard to him. He had done much in defence of the Company's estate at Surat, saving half of their customs there, and procuring other privileges.

As regards trade, we note that private trade was allowed to mariners and others, the Company's monopoly of East Indian trade being to that extent broken into. Rewards for the discovery of private trade indulged in by others were from time to time fixed. One John Coltman was in April 21, 1665, elected as discoverer of the same. The restriction on private trade was thus sought to be made as effective as possible, it being forbidden to all offices of the Company. Trade was rather bad, and a committee was appointed in March 26, 1664 to ascertain the causes of the decay in trade and what remedial measures should be taken for the "right and freedom of their said trades". The Company tried in the same year (1664) to obtain freedom of trade in the Philippines. On July 15, 1665, the Company prepared a petition to the King in which they strongly urged their claims to the East Indian trade, the same being then altogether engrossed by the Dutch.They craved that, like his other subjects, they may be maintained in their just and lawful trade; without which, they added, the whole trade of the Indies must in a short time fall into the hands of the Dutch. In a list of articles, sold under the authority of a General Court of Sales on March 21 and 22, 1666, we note, among other things, sandalwood, which is of

some interest to Mysore, for until recently the Mysore wood was the only wood known to the trade in India.

Altogether this volume of the *Court Minutes* is of more than ordinary interest and our thanks are due to both Miss Sainsbury and Sir William Foster, C.I.E., for the care and trouble they have bestowed on it. Their name ought to be a guarantee for the scholarly character of the work.

Cocoanut Oil Industries.

The Report of the Department of Industries, Madras, for the year ended the 31st March, 1924, refers to the cocoanut oil industries. We note that the possibilities of developing the extraction of cocoanut oil on the East Coast of the Presidency were under the consideration of the Department during the year. It was suggested that an oil mill should be started on the East Coast primarily for the extraction of oil from copra though the possibility of utilizing the mill for demonstrating the commercial extraction of oil from other seeds such as gingelly, groundnut and castor particularly, for example, when the high price of copra rendered it uneconomical to extract cocoanut oil, was also examined. The desiccation of cocoanut and its preparation for export, and the preparation of coir and fibre either as independent units or in conjunction with the proposed oil-mill have also been under investigation. A consideration of the statistics which were collected in respect of the production of and trade in cocoanuts, and the mills which already existed for the expression of cocoanut oil in the area which offered the best prospects for the establishment of a mill, and a discussion with those engaged or interested in cocoanut oil pressing and the trade in coir products, indicated that no necessity existed for the establishment of a demonstration plant under the control of Government, which would necessarily compete with existing presses. Government, therefore, decided to abandon the proposal to establish a demonstration factory of the East Coast for the manufacture of oil from cocoanuts and ordered that the Department should render all possible assistance to persons who contemplated the establishment of oil-mills not only in the matter of applying for aid under the State Aid to Industries Act, but also by rendering technical assistance in the way of preparing plans and estimates for projected mills and by advising in regard to the prospects of success of such concerns. As regards the development of the coir industry on the East Coast and the manufacture of coir matting and ropes, the first requisite for progress is obviously the production of good quality fibre. The industry is already in existence in certain of the coast tracts in the Godavari Delta, though to a small extent and on primitive lines, and with a view to improve the quality of the fibre, instructions for the retting of cocoanut husk for extraction of clean fibre and for the spinning and weaving of coir yarn, were drawn up and copies were forwarded to the district officers of the Department for distribution to those interested in the industry. In regard to the desiccation of cocoanuts, Government considered it desirable that the possibility of starting a factory should be further investigated. There is a considerable overseas' demand for desiccated cocoanut, but it is a very fluctuating one and in view of the fact that the industry has not been taken up by any of the enterprising firms on the West Coast who are engaged in the cocoanut oil and coir manufacturing industries and have already examined its potentialities, it is necessary to proceed with caution and before embarking on any scheme to be satisfied that there is a reasonable prospect of success. The desiccated cocoanut industry in Ceylon is highly developed although it is at present in a depressed condition after enjoying a period of prosperity. The information obtained from the Director of Agriculture, Ceylon, on the subject was, however, inconclusive and the desirability of deputing an officer of the Department to study the conditions of the industry in Ceylon was under consideration at the close of the year.

The "Morning Post" states that the Countess of Warwick has given as a gift Eastern Lodge, her Essex seat, for the purposes of an international labour university. The gift has provisionally been accepted, if it is ratified. The Ruskin College and the existing Labour College will probably be sold and their activities merged in a Socialist university at Eastern Lodge. If the scheme is carried out the Trade Union Congress will undertake the conversion of the building into a college and a hostel will be provided for 200 students from all parts of the world.

Books in Brief.

Short Reviews of Recent Books.

The Science of Prices.

By John A. Todd, M.A. (Oxon.), B.L. (Glasgow). Oxford University Press, London, Bombay and Madras. Price 6*sh.* net.

Professor Todd is so favourably known by his previous works, *The Mechanism of Exchange* and *The World's Cotton Crops*, that it is a pleasure to welcome a new book from him. In the present volume he deals, as only an experienced teacher can, the subject of Economics in the domains of Production, Consumption and Value. His principal aim has been to popularize that aspect of Economics which was brought to the forefront by the late Professor Marshall—the human side of Economics. It need not surprise anybody if he has based his statement of economic theory mainly—if not wholly—on Marshall. We view this laudable endeavour on Professor Todd's part with sympathy, for no one has stressed the ultimate human basis on which the science of every-day life, as he expressively phrased it, depends, than Prof. Marshall. His books, however, if not to master, and introductory volumes of the type now issued by Prof. Todd fill a gap, which has long been felt. Prof. Todd follows a simple plan in his treatment of the subject. First, he states what Economics means; then he shows how we should apply the principles of the system to our own lives; and then sketches out in outline the historical side of Economics, to impress on the student the fact that every economic problem has a history that cannot be ignored. A feature of Prof. Todd's work is that most of his illustrations are drawn from the cotton industry in all its branches, which is not only a thoroughly well-organized industry but also one with which he is well acquainted. The statistical Appendix contains twelve tables of great utility and the Index is a full one. Altogether the book is one eminently suited for College use and we would like to see it introduced into our institutions.

A History of Indian Wars.

By Clement Downing. Edited by W. Foster, C.I.E. Oxford University Press. 7*sh.* 6*d.* net.

We welcome this Edition of Downing's *History* for its intrinsic worth. Downing has been frequently cited as an authority by other writers and as copies of his work are rare, it was a good idea to reprint it under authoritative auspices. Mr. Foster has done the editing with his usual care and in its present form it is a pleasure to read this old and still useful narrative. Downing was a true adventurer and his record is both lively and animating to a degree. Though occasionally faulty, there is still a great deal in his quaint work that is welcome to the historian of the period covered by him (1715 to 1723). The story of Angria, Commodore Matthews' struggle against the Pirates and Plantain Adventures in Madagascar throw fresh light on the life of the period. Mr. Foster's introduction is a brilliant piece of work, just what might be expected from one of his erudite scholarship. The illustrations, among which is a likeness of Commodore Matthews, which forms the frontispiece, add to the value of the publication. No Indian historical library worth the name and no historical student worth his salt can afford to neglect this handy and well edited work.

Culture.

By Major B. D. Basu, I.M.S. (Retd.). Panini Office, Bahadurganj, Allahabad.

This is a great book in small compass. It is, like Bacon and Lubbock, full of apposite quotations. Its utility consists in the fecund nature of its suggestion. Major Basu is apologetic because of what he has borrowed. He need not be sorry, for the best is best because of its value to the world. We have read and re-read this book with great interest and can earnestly commend it to those who would cultivate their minds, their race, and their country. Major Basu deserves the thanks of his countrymen for the excellent volume he has turned out—it is good, it is handy, and it is full of great thought. The book is appropriately dedicated to his mother—a word which kindles in one and all the most sacred memories conceivable.

Imperial Studies in Education.

Edited by E. C. Martin, M.A., Lecturer in History at Westfield College, University of London. Sir Isaac Pitman & Sons, Ltd., London.

This is a collection of papers brought up for discussion at the instance of the Imperial Studies Committee of the Royal Colonial Institute before an Educational Conference organized by it in connection with the British Empire Exhibition at Wembley. Many educational societies joined in the endeavour and contributed to its success. The papers included are of unique interest as showing what leading educationists think on the subject of "Imperial Studies" and its place in the Educational Curricula. Sir Charles Lucas, Chairman of the Imperial Studies Committee, who opened the Conference with an admirable but short speech defined "Imperial Studies" as the study in the true, not the propagandist, sense of its many aspects as there are arts and sciences, of the unit called variously the Empire, Realm or Commonwealth, as you may call, including, but not preferentially so, the motherland. It is the study " of a living fact, a study of a great and unprecedented historical fact, a study of unity in diversity, a study of a League of Nations". The term "Imperial Studies" seems both cumbrous and inexpressive. A more happy phrase would seem to be "Studies in Imperial Citizenship". The need of the hour is not so much the realization of the territorial vastness of the British Empire but the vastness of the responsibility attaching to those who enjoy the upper hand in it. Professor Newton's appeal to "the democracy upon whose votes" depends the realization of this responsibility is both timely and right. The dependent part of the Empire is the crux of the problem; those who are virtually independent, and as such practically partners and associates at will do not count in a matter of this sort. Their education is in their hands, and they come into contact with the dependent part only *indirectly*. The "mother country" referred to by Sir Charles Lucas has a special duty towards the "dependent" part of the Empire and the education imparted should be of a type which will lead to the more satisfactory discharge of this responsibility on the part of the "democracy" referred to by Sir Charles. It is the "democracy" that requires better education than the people of the dependencies. The volume is highly

instructive from the point of view of a cultured Indian—it shows how the average English mind is moving in regard to the Empire idea. The Index is too poor and deserves to be amplified when a new edition of the book is called for.

The Religious Mysticism of the Upanishads.

By R. Gordon Milburn. Theosophical Publishing House, Ltd., 9, St. Martin's Street, London, W.C. 2.

A compact little book giving the quint-essence of the Upanishadic teaching has been long a desideratum. Mr. Milburn admirably supplies this want. His plan and method leave little to be desired. He sets out, we would note, in the *Preface*, the correct principles on which one should translate an Upanishadic text. These principles are excellently conceived and it would be a great help if the generality of translators bore them in mind. We are glad to see he has studiedly shunned that monstrosity—the literal translation of a text. In the *Introduction*, various Upanishadic topics are dealt with commendable clarity and brevity. We regret, however, we have to express the view that Mr. Milburn has neither grasped the position of the Upanishads in the socio-religious history of India nor endeavoured to realize the development of religious (or even philosophical or social) thought in India from a historical point of view. Hence the rather distorted view he gives in the last but one section of his Introduction on the "decline and re-birth of the Vedanta". Mr. Milburn, however, makes up in the last part of his work—translation of *Selected Passages*—what he has lost in his Introduction. These passages deal with the three phases of the Being of God and Epistemology; Ethics, Practical Religion and Soteriology; and Devotional. Mr. Milburn's translation does not suffer by literalness; his prose retains the rythm of the original. His translation of Ch. Up. VII, XXIII—XXV, for instance, is a brilliant piece of work. Subject to the limitations mentioned, the book before us is a work of great merit—and let us add of utility. When Mr. Milburn revises it for the next edition, we have no doubt he will re-write the section we have referred to above.

Christianity and the Religions of the World.

By Albert Schweitzer, Dr. Theol., Dr. Med., Dr. Phil. Translated by Johanna Powers, with a Foreword by Nath. Micklem, M.A. George Allen and Unwin, Ltd., London.

Dr. Schweitzer, in these lectures delivered before the Selly Oak Colleges, Birmingham, 1922, has done well in drawing attention to the pith of the Christian religion. He is anxious to show Christianity *is the one religion* of the world—it transcends all the rest. This may sound strange to comparative religionists, but Dr. Schweitzer writes more as an evangelist than as an historical inquirer or philosophic searcher after the truth. We would urge in the words of the great Saint, whom he no doubt revers: "Prove all things and hold fast to that which is true." "Prove" first, says St. Paul and that is what we should like to stress. Dr. Schweitzer compares and contrasts Brahmanism and Buddhism with Christianity and draws inferences adverse to both of them (see pp. 46—47 for example). The old, old argument of the want of an ethical side to these religions is once again put forth against them. This argument is based primarily on an idea of these religions which is wholly erroneous—for if it were in the least based on a study of the actual *life* of the peoples who profess them—and in our opinion *religion* means *living* or *acting* and no more—such an altogether absurd notion would never have been given currency to by those who ought to know better. The *academic* scholar—who is conerned mainly with the religious works of the Hindus—may be excused, for he knows not at first hand the people of India. But a Christian divine, for instance, has no right to plead ignorance when he wants to criticize. Where ignorance prevails, criticism must cry halt. Brahmanic and Buddhist text-writers and texts should be interpreted with a closer acquaintance with the *life* of the people from whom they have sprung. These writers take much for granted in the reader—they never intended their books to be read, criticized and cauterized by foreign evangelists of Schweitzer's type in the twentieth century. The Upanishads reach a height not reached by any other known thought—spiritual or religious. The difficulty of conceiving, for instance, the Upanishadic *neti neti* to an ordinary western mind is conceivably great for it is as the polls asunder to it from an idea like that of the Kingdom of God—which is a concept which materializes the whole of life, making it cling to this life, nay to this earth. The latter is readily grasped by the average Westerner, but not the former, which even to the least educated in this land is as clear as crystal or the proverbial noon-day sun. Greater and closer knowledge is, therefore, essential before a sound judgment on a matter of this grave importance can at all be rendered possible. The same argument, *mutatis mutandis* applies to the denial of the claim to Brahmanism and Buddhism that each, in its own peculiar way, is "the higher form of the religion of Love," as Schweitzer definitely does. God in the Hindu and Buddhist mind, lives for man—no, not only man, but for all creatures. He rules by service to all creatures—not merely to man. He points the way by thus acting to man. He assumes every shape—Man, Beast or a combination of both to serve the world of sentient and non-sentient beings. This is Brahmanic thought, religion, and philosophy. Equally the same is Buddhist religion and philosophy—but cast in a more familiar mould. The religion of Christ, having regard to where it originated—strasses only one aspect of this central fact of the Brahmanic and Buddhist faith. There is great truth in this definition of Brahmanism which in one form or another is the religion of India:—"My religion is that religion of which Christianity is its offshoot and Buddhism its rebel child." Dr. Schweitzer's book is valuable to us in this country for the naked form in which it casts the familiar assertions as to the superiority of Christianity as a religion over Brahmanic and other faiths. It deserves attention, because it enables us to learn what one of Dr. Schweitzer's zeal and learning has to say on the familiar stock arguments we hear from the ordinary preachers of Christianity in this land.

Records of the Geological Survey of India.

Vol. LVIII, Part 3 (of 1925), of the *Records of the Geological Survey of India* has been issued. The following are the contents:—(1) The Mineral Production of India during 1924, by Mr. L. Leigh Fermor, Officating Director, Geological Survey of India; (2) Note on the Enstatite-Augite Series of Pyroxenes, by Mr. L. Leigh Fermor, Officiating Director, Geological Survey of India; (3) Note on the Constitution of Glauconite and Celadonite, by Mr. L. Leigh Fermor, Officiating Director, Geological Survey of India; and (4) Palagonite-bearing Dolomite from Nagpur: Suggestion regarding the Nature and Origin of Palagonite, by Mr. D. N. Wadia, Assistant Superintendent, Geological Survey of India. Copies of this publication

are obtainable from the Government of India, Central Publication Branch, 8, Hastings Street, Calcutta. (Price Rs. 2–12 per part or Rs. 11 per volume of four parts.)

Cottage Industries in Bengal.

A copy of the Report on the Survey of Cottage Industries in Bengal, issued by the local Department of Industries, deals with the various cottage industries in the different divisions of the province and will be found to be a useful book of reference to those engaged in industrial undertakings. Copies of this publication are obtainable from the Bengal Secretariat Book Depot, Calcutta, at Rs. 4–12 per copy.

Housing in America.

The International Labour Office of the League of Nations has just completed a valuable study on the housing problem in the United States of America. Apart from the fact that the direct effects of the war in America were so much less severe than in Europe, an essential difference is to be found in the prevalence in America of "home owning", although the situation has changed slightly within the last 30 years to the detriment of home ownership. Thus, in 1890 the proportion was 52.2 per cent rented homes to 47·8 per cent owned, whilst in 1920 the proportion was 55·4 per cent rented to 44.6 per cent owned. Moreover, besides being relatively mild, the housing shortage in America has been to a considerable degree local, and in part strictly temporary. On the one hand a shortage occurred in the industrial centres engaged in the manufacture of munitions, which largely disappeared after the war. On the other hand after the war situation had been liquidated a certain shortage of a more permanent kind had to be recognized as existing in many of the larger cities. In the United States, as in Europe, the war came in a period of decline of building activity resulting from the withholding of private capital from building enterprise on account of its diminished profits. This had already produced a slight housing shortage. After the conclusion of the war private building activity resumed proportions considerably nearer to the normal than in any of the European countries directly affected by the war, but towards the end of 1919 and the beginning of 1920 a tendency for the worse became apparent. There was a strong upward tendency from 1917 onwards in both wages and prices of materials, and this was particularly marked in 1920. In addition the transport and coal situations were critical in that year and capital was difficult to obtain. As a consequence building ceased to be a profitable undertaking and the activity which had immediately followed the war fell off. The year 1921, however, was generally characterized by a fall in prices and, to a much less extent, by a reduction in wages, leading to a general decrease in the cost of building, so that as rents remained stationary or even rose, capital was once more attracted and a recovery in building activity took place. The years 1921-1923 show a steady increase in building construction, both residential and non-residential; thus for 258 identical cities 271,231 building permits were issued in 1923 as compared with 231,373 in 1922 and 156,980 in 1921. In some cities the volume of building "approached a real boom". It is stated, however, that "the boom has largely passed over those groups within the population who have suffered most from the housing shortage. Ways and means still have to be found to help solve the housing question for the low paid wage-earner. Housing reformers, philanthropic builders, employers, co-operative groups (*e.g.*, tenants, building trades workers) and public authorities still have their part to play. In other words the private commercial builder who continues to build most of the homes of the population is still unable to solve the problem unaided." Instances are quoted to show the part actually played by all these groups and methods, including an experiment with tax exemption in New York State, of which the results are difficult to estimate: it being claimed, on the one hand, that building activity has been stimulated by this method, and on the other, that rents have been brought no lower and that house construction costs have not been reduced.

Satara Historical Museum.

His Excellency the Governor of Bombay made the following speech at the opening of the Satara Museum, on November 3rd:—I am very glad that it has fallen to my lot to open this Museum, the construction of which has been, owing to unavoidable causes, so long deferred. As has been explained by Mr. Parasnis in the address which he has just read, the project has been supported by successive Governors for fifteen or sixteen years, and, had it not been for the War, it would no doubt have been brought to a successful conclusion many years ago. As you all know, Government have been very seriously hampered for want of funds during the last few years, and I think I may say that, had it not been for the indefatigable efforts of Rao Bahadur Parasnis, the construction of this building might have been still further postponed. Government have, however, recognized the great value of the collection which Mr. Parasnis has put together during so many years, and have realized the importance of these historical records to the life of the Bombay Presidency, and in particular to the Mahratta community, to whose forefathers so many of these records relate.

The study of history can be looked at from many points of view, and I am not prepared to agree with one of our greatest historians, who has said that history "is indeed little more than a register of the crimes, follies and misfortunes of mankind". Although these must necessarily form materials for a considerable part of the history of any country, they are the least valuable materials, except perhaps as an indication of what future generations should avoid. Here, in Satara, the history of the Mahratta Empire must be a great inspiration, especially to the young men of that great community, pointing out to them what their ancestors achieved in the past, and what they can achieve, although by different methods, in the future. The days in which a Mahratta army could penetrate as far as Calcutta are gone, but there is no reason why Mahratta courage and Mahratta ability should not make its mark on the history of India,—a mark even greater and more permanent, in that it may be made in a peaceful and constitutional manner, than the more spectacular, but short-lived efforts of those whose records have been housed in this Museum.

The names which Rao Bahadur Parasnis has mentioned will always be remembered with deep gratitude for their untiring and unselfish efforts in historical research in India, and particularly will the names of those who have worked so hard to gather together the threads of the history of the Mahrattas be remembered in this Presidency. This Museum will be a source of great encouragement to further research. I sincerely echo the hope expressed that scholars,

both European and Indian, will take advantage of the library and manuscripts, and, in days to come, I feel sure that Rao Bahadur Parasnis will be able to look back, with even greater pride than he does to-day, on the great results of his thirty years' work, devoted entirely to this great cause of History.

I am sure you will all join with me in congratulating him on the success of his efforts, not only by collecting original documents and pictures, but by the work he has done in historical research of an independent character. I would also like to remind you of a book written by the Rao Bahadur in collaboration with Mr. C. A. Kincaid, whose great services to Indian History are well known, entitled "The History of the Maratha People",—a book of vivid interest and of very great historical value. It is not often that wide scholarship and practical ability are so happily combined as they are in the character of Mr. Parasnis, and you will, I am sure, all join with me in hoping that he may be long spared to carry out his researches in these pleasant and favourable surroundings, and that the Museum will be a valuable source of information and inspiration, not only to the people of this Presidency, but to scholars of history throughout the world.

American Trade with India.

Imports and Exports.

Total Exports from the United States, September 1925 ..	$420,318,000
Total Imports into the United States, September 1925 ..	$350,000,000
Excess of Exports ..	$ 70,318,000
Trade with India.	
Exports from the United States to India, September 1925 ..	$ 3,063,000
Imports into the United States from India, September 1925 ..	$ 10,330,000
Excess of Imports ..	$ 7,267,000
Trade with Ceylon.	
Exports from the United States to Ceylon, September 1925 ..	$ 195,000
Imports into the United States from Ceylon, September 1925	$ 3,249,000
Excess of Imports ..	$ 3,054,000

Some of the more important items *exported* from the United States to India during the month of September were :—

Canned fruit	142,000 lbs.
Dyes	139,000 lbs.
Kerosene oil	2,600,000 gals.
Lubricating oil	2,400,000 gals.
Machinery valued at	$391,000
Automobiles	249
Motor trucks	59
Steel sheets	3,728,000 lbs.
Steel tubes, pipes and fittings ..	2,895,000 lbs.
Bolts and nuts	30,000 lbs.

Some of the more important items *imported* into the United States from India during the month of September were :—

Burlap	36,176,000 lbs.
Cotton	1,390,000 lbs.
Goatskins	4,827,000 lbs.
Shellac	2,036,000 lbs.
Tea	269,000 lbs.
Mica	312,000 lbs.
Castor beans	8,851,000 lbs.
Manganese ore	10 tons.

The Indian Point of View in Economics.

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Development of People's Banks.

Industrial and Commercial prosperity of a country is dependent upon the banking facilities it affords. The development of private banks in India is very slow in spite of encouragement and facilities rendered by the Government. The failure of joint-stock banks in our country is marked, but their place is being gradually taken up by co-operative banks. If these urban banks are to successfully operate, their scope must be greatly widened—they must go far out of their present field of money-lending and adopt all modern business methods. They will have to establish good credit, attract substantial local capital, undertake inland exchange business, discount usance bills, finance trade in agriculture and finance any other small industry that might be in need of assistance. All these require careful and expert management. That most of the banks, in India, are managed by inexperienced and ill-paid men is a well-known fact. It is true that co-operative banks, beginning with small capital and running business on a small scale cannot afford to pay for expert management. Mr. V. C. Jadav, in an article contributed to the *Bombay Co-operative Quarterly*, suggests that "in order to do all this and to do this well, all the people's co-operative banks belonging to a division should form themselves into a federation or supervising union. The expenses of this federation or union should be made up by the banks forming this union. In the initial stages, however, the banks concerned will not be in a position to pay the full cost and so they may approach the Central Co-operative Institute, to contribute out of the funds at its disposal grants equal to at least one-third the cost of management of the supervising union. The federation or union will have a managing director who should be an expert in banking and who may be paid a salary or an honorarium and the federation will also engage the services of a travelling Inspector or Supervisor, who will visit the banks once a month or once every two months as the case may be." It is hoped, that by following this suggestion, one of the great hardships of co-operative concerns could be surmounted and the growth of such undertakings facilitated.

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